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UNITED NATIONS

WORLD STATISTICAL CONGRESS

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PROCEEDINGS OF THE INTERNATIONAL STATISTICAL CONFERENCES

VOLUME II

William J. Bruce, Volume Editor

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INTRODUCTION

The Economic and Social Council at its Fourth Session, February 28 to March 29, 1947, decided to convene a World Statistical Congress in Washington, D.C., in September 1947, consisting of a limited program of general meetings focusing attention upon the statistical activities of the United Nations, the Specialized Agencies, and nongovernmental organizations.

This action was based upon the recommendation of the Statistical Commission which, at its First Session, January 27 to February 7, 1947, considered:

> That a World Statistical Congress under the auspices of the Economic and Social Council would greatly benefit the United Nations by the opportunity afforded to the members of the Statistical Commission, as well as the statistical staff of the Secretariat and the Specialized Agencies:
>
> (a) To ascertain at first hand the statistical problems, both general and specific, which a world-wide representative assembly of statisticians would wish the Statistical Commission and the Statistical Office of the United Nations to consider during the next few years;
>
> (b) To explain to the statisticians of the various countries, including countries not now represented on the Commission, the program of work on which the Statistical Commission, the Statistical Office of the United Nations, and the Specialized Agencies and non-governmental organizations are at present engaged or are contemplating; and
>
> (c) To explain and develop the means by which the statistical activities of the Specialized Agencies, quasi-governmental and nongovernmental organizations might be related to each other and to those of the United Nations in fostering international cooperation in the improvement of statistics.

Invitations were sent in the early part of 1947 to Member Governments of the United Nations to participate in the World Statistical Congress. The Specialized Agencies, intergovernmental agencies, and interested nongovernmental organizations were also invited to participate and to coordinate the time and place of their statistical meetings with those of the World Statistical Congress.

As a result the United Nations World Statistical Congress—the first world-wide congress of statisticians convened under the auspices of the United Nations—became one of the interrelated International Statistical Conferences held at Washington, D.C., September 6-18, 1947. Delegates and participants from fifty countries spent nearly two weeks together, and enjoyed the unique opportunity of meeting each other in and out of the conference rooms, and discussing matters of common interest in regard to their statistical activities.

Perhaps the outstanding achievement of the World Statistical Congress was the opportunity it afforded to the leading statistical workers of many countries for an over-all acquaintance with the statistical program and activities of the United Nations and the Specialized Agencies, as well as for an exchange of ideas and experiences with fellow workers in other countries arising out of their respective activities in the same professional field.

In order to provide in permanent form the addresses, papers, and discussions presented during the meetings of the Congress, for purposes of record and of reference, the present volume contains the text of all the addresses given during the meetings of the World Statistical Congress, as well as all other papers presented by title. These addresses and papers are reproduced in the original language in which they were presented, together with an abstract in the other of the two working languages of the United Nations. The record of the proceedings, including resumes of discussions on the various topics by the participants, appears only in the English language.

William J. Eruce
Volume Editor

OPENING ADDRESS

by Trygve Lie

Secretary-General of the United Nations

It gives me great pleasure to welcome you to this opening meeting of the World Statistical Congress on behalf of the United Nations.

Your presence here testifies to the importance of the occasion. It confirms the belief of the Economic and Social Council and of the Statistical Commission that the time has come for the statisticians of the world to take stock of present activities in this field and to make proper plans for the future.

The task ahead will require the combined efforts of all countries and of all organizations. For this reason I am very glad that it was possible to arrange for concurrent sessions of the five important professional groups which have scheduled their technical and business meetings in conjunction with the meetings of the World Statistical Congress. On behalf of the Economic and Social Council I warmly welcome the delegates to these organizations to all the meetings of the World Statistical Congress. I am confident that these organizations will find it possible to work closely with the United Nations in the task of building and improving the statistical machinery for international cooperation.

The mission of all statistical organizations in the years ahead is a vital one and an urgent one.

The free exchange of information on economic and social affairs among all countries in the world is absolutely necessary to economic and social advancement. We cannot cure our troubles unless we know in the first place what those troubles are. Likewise we cannot achieve international understanding, which is the basis of advancement, unless the peoples of the world are given the facts about each other. Nations are now too large, economic affairs are now too complicated and too highly interrelated, for us to rely upon the accounts of returned travellers for our information on economic and social progress. We are much farther upon our course than we were in the days of Marco Polo and of Captain Cook. There is no substitute for facts, for clear and systematically organized facts. They alone can be relied upon to measure resources and potentialities for progress and to direct policies and actions designed to achieve the objectives of all civilized peoples.

Facts are just as important for the United Nations and for the intergovernmental agencies which are being brought into relationship with the United Nations as they are for a national government or for the managing directors of a large business enterprise. The larger the organization and the more complex the problems with which it is confronted, the more need there is for comprehensive and up-to-date information, systematically organized and freely available.

I must emphasize what must be considered the three indispensable characteristics of statistical systems adequate to support and direct economic and social progress. In the first place, the statistics must be comprehensive and timely. They must be as comprehensive as the problems with which we are trying to deal. They must be sufficiently timely to record the current status of conditions in periods of rapid change. Statistics which are not up-to-date are of little use in dealing with current problems.

Secondly, the statistics must be carefully organized. By this I mean that they must be comparable from time to time and from place to place. This problem of comparability is especially acute when we deal with the interrelated problems of many countries of vastly different characteristics. Difficult as the problem of comparability is, it must be solved. Unless it is solved we shall be seriously handicapped in studying and dealing with problems on an international scale.

Finally, it is obvious that statistics must be freely exchanged between all those who are working on common problems.

According to these standards, which nobody can dispute, the position today is nowhere near satisfactory.

The world is only now recovering from a statistical blackout of nearly ten years' duration. The free exchange of statistics on economics and social trends and current developments was made impracticable during the war for security reasons, even among those countries whose statistical machinery continued to operate. In many countries which suffered the devastation of war, statistical machinery ceased to operate and is now being painstakingly rebuilt. In many other countries adequate statistical machinery has never existed.

It is shocking to realize that no statistics worthy of the name exist for probably half of the world's peoples. No one knows exactly how many people there are, how they make their living, or the characteristics of their social, economic, and political institutions.

There is ignorance about the economic and social resources available for the development of adequate and dignified standards of living, ignorance about the most elemental facts that would highlight the condition of the society and point to possibilities of improvement.

I do not mean to imply that those concerned are unaware of the usefulness of statistics. I only want to emphasize the tremendous size of the task which must be undertaken in your field if the world is to reap the advantages of concerted action upon important common problems, It is obvious, of course, that an adequate statistical system is, to a high degree, dependent on the political and economic organization within a given country. Nevertheless, the development of statistics in the areas where they are lacking is one of the urgent tasks to which we all must give our best attention.

What of the other half of the world's peoples about whom some statistics are available? Here, too, there is no room for complacence. There are possibly thirty countries which have reasonably accurate statistics on the elemental facts of birth and death; only about twenty-five countries have attempted to make even crude estimates of their national income. In many countries no statistics are available about education, health, or sanitation, about the amount and utilization of manpower or of agricultural and industrial resources, or about the host of other economic and social factors which must be measured in order to define the problems we wish to solve. Even in countries that are considered the most advanced we often know more about the number, condition, and progeny of livestock than we know about human beings.

I have mentioned before that the time is opportune for the statisticians of the world to sit down together to look at the problems they jointly face in organizing statistical work in countries and in areas of economic and human interest where statistical facilities are lacking. The time is ripe to speed cooperative work upon measures to promote comparability of statistics from place to place and from time to time. The time is ripe to establish channels for the widest possible exchange among countries of the statistics themselves and of the methods and materials which produce the statistics.

In convening a World Statistical Congress, the Economic and Social Council was aware of all the factors I have mentioned. It was aware that the work which lies ahead of the statistical offices of the international agencies must be done cooperatively and in full recognition of the needs that it must serve. The Council wished to provide an early opportunity for a discussion of statistical problems and of the methods we have at our disposal for their solution.

The programs for the meetings have been arranged to provide the fullest account possible at this time of the statistical activities of the United Nations and the Specialized Agencies and to provide a cross section of the most important developments in the statistical work of national governments. The programs will emphasize the needs for statistics by the international agencies and the methods the agencies are using to meet these needs. The United Nations is conscious of the role of leadership that it must assume in drawing the attention of Member Governments to urgent statistical problems and of the initiative it must take in seeking solutions for them. In addition, the United Nations will welcome requests of Member Governments to be of every possible assistance on all matters dealing with statistics—on matters ranging from those on the content of national statistical programs to those on effective statistical methods and procedures. In discharging these functions the United Nations must draw very heavily upon the experience of the national statistical offices.

I am convinced that the United Nations, with the generous participation of Member Governments and the Specialized Agencies, can make a significant and unique contribution to the statistical knowledge of the world. The importance of this contribution is not lessened in any way by its technical nature and the fact that it lacks the drama which makes newspaper headlines. The progress that I confidently count on will be solid and permanent. It will advance the objectives of the United Nations and the interests of people everywhere.

I am sure that the objectives of this Congress will be achieved. I thank you all for coming and I wish you all success in your work, now and in the future.

ALLOCUTION DE BIENVENUE

par Trygve Lie

Secrétaire Général des Nations Unies

C'est avec un très grand plaisir qu'au nom des Nations Unies, je vous souhaite la bienvenue à cette séance d'ouverture du Congrès mondial de statistique.

Votre présence témoigne de l'importance de cette réunion et confirme cette opinion des membres du Conseil économique et social et de la Commission de statistique que le moment est venu pour les statisticiens du monde entier de faire le bilan des travaux accomplis jusqu'à ce jour en ce domaine et d'élaborer pour l'avenir des plans appropriés.

La tâche qui est devant vous exige la conjugaison des efforts de tous les pays et de toutes les organisations. Aussi suis-je très heureux qu'il ait été possible d'organiser simultanément les sessions de cinq organisations professionnelles importantes qui, pour leurs réunions techniques et leurs réunions d'affaires, ont fixé des dates concordant avec celles des séances du Congrès mondial de statistique. Au nom du Conseil économique et social j'invite cordialement les représentants de ces organisa-

tions à toutes les séances du Congrès mondial de statistique. L'expérience, j'en suis persuadé, leur montrera qu'il est possible de collaborer étroitement avec les Nations Unies à l'édification et à l'amélioration de l'organisation statistique, au bénéfice de la coopération internationale.

Dans les années qui viennent, toutes les organisations de statistique auront à accomplir une tâche essentielle et urgente.

La liberté dans les échanges de renseignements entre tous les pays du monde sur les questions économiques et sociales est absolument indispensable au progrès économique et social. Nous ne pouvons pas guérir nos maux sans savoir d'abord quels ils sont. De même nous ne pourrons pas créer l'atmosphère de compréhension internationale qui est la base du progrès, si chacun des peuples du monde ne peut connaître les données de la vie des autres.. Les nations sont maintenant trop grandes, les affaires économiques trop compliquées et trop étroitement interdépendantes pour que nous nous contentions des récits de voyageurs pour nous informer sur les progrès sociaux et économiques. Nous avons fait une longue route depuis les temps de Marco Polo et du capitaine Cook. Rien ne peut remplacer les faits, les faits précis et méthodiquement organisés. Ce sont les seuls éléments sûrs pour évaluer les ressources et calculer les possibilités de progrès, pour diriger les politiques et toutes décisions destinées à réaliser les buts de tous les peuples civilisés.

La connaissance des faits est tout aussi importante pour l'Organisation des Nations Unies et pour les institutions intergouvernementales qui sont en relation avec elle que pour le gouvernement d'un pays ou les directeurs d'une grande entreprise commerciale. Plus une organisation est vaste, plus les problèmes qu'elle doit résoudre sont complexes, plus les renseignements dont elle a besoin doivent être complets, tenus à jour, classés méthodiquement et d'accès facile.

Je tiens à insister sur ce qu'on doit considérer comme les trois qualités indispensables d'une organisation statistique capable de soutenir et de diriger le progrès économique et social. Tout d'abord les statistiques doivent être complètes et tenues à jour. Elles doivent embrasser tous les domaines auxquels touchent nos travaux. Elles doivent être assez exactement tenues à jour pour rendre compte des conditions du présent immédiat dans une époque d'évolution rapide. Des statistiques non tenues à jour ne peuvent être d'un grand secours pour résoudre les problèmes de l'actualité.

En deuxième lieu, les statistiques doivent être organisées avec soin. Je veux dire par là qu'elles doivent être comparables dans le temps et dans l'espace. Le problème de la comparabilité se pose avec une acuité toute particulière quand on a à traiter de ces questions interdépendantes qui intéressent différents pays de caractéristiques très différentes. Si difficile qu'il soit, il faut que le problème soit résolu si l'on ne veut pas être sérieusement handicapé dans l'étude et la solution d'autres problèmes qui sont à l'échelle internationale.

Enfin, il est évident que l'échange des renseignements statistiques entre tous ceux qui travaillent à la solution de problèmes communs doit se faire librement.

D'après ces critères, que personne ne contestera, la situation actuelle est loin d'être satisfaisante.

Le monde ne fait que sortir d'un *blackout* statistique qui a duré près de dix ans. Pour des raisons de sécurité, le libre échange de renseignements statistiques sur les tendances économiques et sociales et sur les développements courants de la situation, a été rendu impossible pendant la guerre, même entre les pays dont l'organisation statistique continuait de fonctionner. En de nombreux pays qui ont été dévastés par la guerre, les organismes statistiques ont cessé de fonctionner et sont actuellement en train de se reconstruire péniblement D'autres pays, fort nombreux, n'ont jamais eu d'organisme statistique répondant aux besoins.

Il est choquant de constater que pour la moitié des peuples environ on ne possède aucune statistique digne de ce nom. Personne ne sait exactement à combien se monte leur population et comment celle-ci gagne sa vie, quelles sont les caractéristiques de leurs institutions sociales, économiques et politiques.

Dans le domaine économique et social, on ignore les ressources qui sont disponibles pour établir des conditions de vie suffisantes et décentes, on ignore les faits les plus élementaires qui mettraient en lumière l'état de la société et permettraient de trouver les possibilités d'amélioration.

Je ne veux pas dire que ceux auxquels incombe une responsabilité dans ce domaine ignorent l'utilité des statistiques. Je veux seulement insister sur l'ampleur immense de la tâche qui est à entreprendre dans votre domaine de la statistique si l'on veut que le monde récolte les bénéfices d'une action concertée sur les problèmes communs les plus importants.

De toute évidence l'organisation d'un système statistique convenable dépend étroitement, dans chaque pays, de l'organisation politique et économique. Néanmoins, dans les régions qui en sont dépourvues, l'établissement de statistiques est une des tâches les plus urgentes à laquelle nous devons consacrer toute notre attention.

Que dire de l'autre moitié des peuples du monde pour lesquels nous possédons certains renseignements statistiques? Là encore, il n'y a pas lieu d'être très satisfait. Trente pays peut-être possèdent des statistiques sensiblement exactes sur les éléments démographiques fondamentaux: naissances et décès; vingt-cinq pays seulement ont essayé d'évaluer en chiffres bruts leurs revenus nationaux. Beaucoup de pays ne possèdent aucune statistique en ce qui concerne l'instruction, la santé ou l'hygiène publique, l'effectif et l'utilisation de la main-d'oeuvre, le montant et l'utilisation des ressources agricoles et industrielles, ni en ce qui concerne la foule des autres éléments économiques et sociaux, qu'il est nécessaire de mesurer pour définir les problèmes que nous voulons résoudre. Même dans les pays considérés comme les plus avancés, nous avons souvent plus de renseignements sur l'importance numérique, la condition et la reproduction du cheptel que sur les êtres humains.

J'ai dit précédemment que le moment est venu pour les statisticiens du monde entier de se réunir en vue d'examiner les problèmes communs qui se posent à eux pour l'organisation des travaux statistiques dans les pays et les régions qui présentent un intérêt du point de vue économique et humain et qui manquent de statistiques. Le moment est venu d'accélérer les efforts communs pour définir les mesures qui amélioreront la comparabilité des statistiques de pays à pays, de période à période. Le moment est venu de frayer les voies pour l'échange le plus large possible entre les différents pays, tant des statistiques elles-mêmes que des méthodes et du matériel qui permettent de les obtenir.

En convoquant un Congrès mondial de statistique, le Conseil économique et social avait connaissance de tous les facteurs que j'ai mentionnés. Il savait que la tâche qui incombe aux bureaux de statistique des institutions internationales doit être accomplie en commun et avec une pleine connaissance des besoins à satisfaire. Le Conseil désirait organiser le plus rapidement possible une réunion où l'on discuterait des problèmes statistiques et des méthodes dont on dispose pour les résoudre.

Le programme des séances a été établi de façon que le Congrès ait un compte rendu aussi complet que possible à l'heure présente des activités statistiques des Nations Unies et des institutions spécialisées ainsi qu'un aperçu caractéristique des progrès les plus importants qui ont été accomplis dans les travaux statistiques des gouvernements. Il y sera mis en relief les besoins des institutions internationales en matière de statistiques et les méthodes qu'elles utilisent pour les satisfaire. L'Organisation des Nations Unies est consciente de la tâche qui lui incombe, de diriger l'attention des Gouvernements Membres sur les problèmes statistiques les plus urgents et de prendre l'initiative pour la recherche de leur solution. D'autre part elle accueillera avec reconnaissance le concours que pourront lui offrir les Gouvernement Membres désireux d'aider dans la mesure de leurs moyens, a l'étude des questions statistiques de toute sorte, depuis celles touchant le contenu des programmes statistiques nationaux jusqu'à celles des méthodes et procédés statistiques les plus efficaces. Pour accomplir ces tâches, les Nations Unies auront à utiliser très largement l'expérience des bureaux nationaux de statistiques.

Je suis convaincu qu'avec la généreuse collaboration des Gouvernements Membres et des institutions spécialisées, les Nations Unies peuvent apporter à la connaissance statistique du monde, une contribution d'une importance sans ègale. L'importance de cette contribution ne sera en rien diminuée par son caractère technique ni par ce qui lui manque, ce côté spectaculaire qui a droit aux gros titres des journaux. J'attends avec confiance les progrès qui seront réalisés; ils seront solides et durables. Ils aideront les Nations Unies à atteindre leurs objectifs et serviront les intérêts des peuples du monde entier.

Je suis sur que ce Congrès atteindra les buts qu'il se propose. Je vous remercie tous d'être venus et je vous souhaite, pour le present et pour l'avenir, un succès complet dans vos travaux.

STATISTICAL ACTIVITIES OF THE UNITED NATIONS

Tuesday, September 9, at 2:00 p.m.

CHAIRMAN:

Jan Papanek

Acting President, Economic and Social Council of the United Nations

The CHAIRMAN noted that the program had been arranged to provide an opportunity for the United Nations to explain its role in the development of statistical activities serving the needs of international organizations and to obtain the views of the participants on the ways in which those activities could be directed to serve their purposes most effectively. He then introduced the speaker.

THE WORK AND PROGRAM OF THE STATISTICAL OFFICE OF THE UNITED NATIONS

A. D. K. Owen

Assistant Secretary-General of the United Nations in Charge of Economic Affairs

It gives me a great deal of pleasure to be present on this occasion and to be able to give you some account of the work and program of the Statistical Office of the United Nations. When the suggestion for a World Statistical Congress to be held under the auspices of the United Nations first came to my attention a little more than a year ago, I faced the prospect with some trepidation. At that time the organization of the Statistical Office was in the blueprint stage. A bare start had been made on staffing the Office and we had just completed arrangements to obtain the services of Mr. Harry Campion, of the United Kingdom Central Statistical Office, as the first Director of our Statistical Office. The results of his wise and forceful leadership in the development of the organization and its program of work, and the record of accomplishment achieved by him and his unusually competent staff now at work, make it possible for me to discuss the work of the Statistical Office with a sense of real pride and gratification.

My pleasure on this occasion is intensified by my deep conviction that the role of statistics in the work of the United Nations and of the specialized inter-governmental agencies is of the utmost importance. Many of the problems which are the concern of international organizations can be expressed in their simplest terms by the use of figures; therefore the analysis of the complex economic and social problems involved and the selection of measures designed for their solution may be speeded and simplified. It is not necessary for me to state this very obvious fact to a group of statisticians; I only mention it in passing to emphasize the need for solid statistical work by the international agencies supported in all its aspects by the very generous cooperation which is being given by the statistical offices of national governments.

It is probably true that statistics and information on statistical methods could be exchanged among the principal countries without the efforts of the Statistical Office of the United Nations. I am sure you will all agree, however, that these exchanges are greatly aided by the services of a central agency which is able on a continuing, day-to-day basis, to serve as a general clearinghouse and to provide leadership and coordination in the development of generally acceptable statistical standards and methods of cooperation.

Without the day-to-day services of such a central clearinghouse, international cooperation in statistical matters would have to depend on bilateral and sporadic methods of barter and exchange which are too slow and cumbersome to permit the rapid progress which we all know is urgent and necessary.

I think it is fortunate that the central role of statistics in the solution of international problems was recognized at an early stage by those responsible for creating the Specialized Agencies and the several main organs of the United Nations itself. This recognition was shown most prominently in the early provision for a Statistical Commission within the framework of the United Nations. It found further expression in the work of the nuclear Commission, which laid the basis for an effective over-all plan of international organization for statistics before the pressing needs for particular types of statistics might foreclose the possibility of achieving an orderly and coordinated system. Mr. Marshall, Chairman of the Statistical Commission, will tell you of the many ways in which the Commission has served to focus efforts toward the further development of this system, and I shall not anticipate his remarks now.

Because of the complex character of the statistical work in which we are engaged, I consider it most unfortunate that all countries cannot at the same time be directly represented on the Statistical Commission of the United Nations, or upon the statistical advisory groups of the Specialized Agencies. This circumstance, in fact, brings me to the compelling reason why the Economic and Social Council of the United Nations decided, upon the recommendation of the Statistical Commission, to convene a World Statistical Congress. The Commission viewed the

World Statistical Congress, as I view it, as an opportunity to discuss with you the purposes and nature of the statistical work of the United Nations and to be assured that this work is developing in the directions that the participating national statistical offices consider most useful and mutually rewarding. I will therefore welcome your observations upon the present and proposed work of the Statistical Office, and I hope that this Congress will provide opportunity for each of you to make such observations.

The Statistical Office of the United Nations occupies a central position in the pattern of organization which has been developed to serve the statistical needs of international cooperation. This central position imposes unique responsibilities in the same way that the central position of the United Nations itself among international organizations gives it a special role in world affairs. Foremost among these responsibilities is the obligation to provide the leadership and coordination which are essential to the effective performance of any kind of organized activity. The extent of this obligation and the measure of its fulfillment can be most readily grasped from an account of the functions of the Statistical Office and the performance of these functions over a period of time.

This account should begin, therefore, with the primary function of any statistical organization—to collect statistics and to make them available for use. This activity, of course, constitutes an important part of the work of the Statistical Office of the United Nations, whose first task is to provide the statistics needed by the various councils, the commissions, and the Secretariat in the performance of their functions. This task takes the form of assembling available statistics of all countries rather than direct collection of statistics in the usual sense. The task undertaken earlier this year in the compilation of statistics on crime and the treatment of offenders is an illustration of this work. In this instance the Statistical Office, as the central statistical organization serving all organs of the United Nations, was asked by the Department of Social Affairs to assist in the assembly of statistics required by that Department in connection with a resolution of the Economic and Social Council which called for submission of "a report . . . on the question of the prevention of crime and treatment of offenders showing which suggestions are suitable for international action and how they could be carried out." For this purpose a uniform questionnaire was drafted and sent to the statistical offices of all national governments. The response to this request was generous and prompt, as it has been in all other instances in which the cooperation of national statistical offices was sought.

It should be noted that the replies to the questionnaire on crime will be utilized not only for the special purpose for which they were designed but also, to the extent applicable, for the forthcoming issue of the statistical yearbook of the United Nations. In this instance a special questionnaire required to meet an immediate special purpose was made to serve more general purposes as well. More often, of course, the reverse situation obtains, in that special tabulations and supporting detailed analyses of statistics already assembled for general purposes are made to fill particular needs of the United Nations, national governments and other users. In fact, most of the work of the Statistical Office serves such purposes directly or indirectly.

The statistics needed for operating purposes are largely unforeseeable. They may concern almost any field of activity and may include all matters now or potentially subject to consideration by the United Nations. As the central statistical unit, the Statistical Office must be prepared to meet such needs as they arise. To do so without resort to frequent *ad hoc* requests to national governments, causing needless burdens upon their statistical organizations, the Office endeavors to obtain all statistical publications of national governments so that whenever possible questions may be answered by reference to published sources.

Many of the needs of international organizations for statistics are fulfilled without special inquiries or tabulations by means of the *Monthly Bulletin of Statistics* and other publications of the Statistical Office. It is the object of these publications to provide the most useful general-purpose data which it is possible to make available, on as many countries as possible, covering the most important economic and social problems. These publications are also intended to serve the needs of national governments for current statistics on conditions in other countries.

You have all observed the expansion which has taken place in the tables contained in the *Monthly Bulletin of Statistics*—from a total of 850 series in the issue for January 1947 to nearly 1500 series in August. At present, current statistics are received regularly by air mail and cable from more than fifty different countries. I hope that all of you share the satisfaction in the accomplishment to which you have all contributed so largely. I hope also that we shall be able, with your help, to continue to enlarge and improve successive issues of the *Monthly Bulletin*. There is a steady and growing demand from national governments, national and international organizations, industrial concerns, and individual users of the *Bulletin* for additional detail on many subjects and for new tables.

Those of you who had an opportunity to follow the proceedings of the last session of the Statistical Commission, recently concluded at Lake Success, are familiar with the status of plans and arrangements for publication of the statistical yearbook of the United Nations, the yearbook of demographic statistics, the *Supplement to the Monthly Bulletin of Statistics* and other publications on which work is going forward. I shall refer to some of these arrangements only briefly, to illustrate their place in relation to the program of work of the Statistical Office.

Work has been started by the Statistical Office and the Population Division on a yearbook of demographic statistics to provide a source book of demographic data. The first issue of the yearbook, which should appear early in 1949, will contain statistical tables showing, for as many countries as possible, data on population by area, age and sex, marital status, race, nationality, and other characteristics; on households and families; on the labor force by sex, age, occupation and industry; on immigration and emigration; marriage and divorce; births and deaths; and morbidity. The procedure for compilation of the yearbook material is being designed to minimize the demands made upon national statistical offices by utilizing, as far as possible, data from official sources already available.

Plans are now being made for a first issue of a general yearbook of statistics. This yearbook is designed to contain more detailed data than the *Monthly Bulletin* for a larger number of countries and on a wider range of subjects. The yearbook will provide more detailed data than the *Monthly Bulletin* on such subjects as industrial and agricultural production; it will include statistics for a larger number of countries, since it will be possible to publish annual figures for some countries for which monthly data are not available; and it will include tables on additional subjects such as balance of payments, transport and communications, education, social security, and other topics which, although of great importance, need not be covered regularly in a monthly publication. The yearbook of statistics likewise will be compiled as far as possible from data already available, and will be carefully integrated with the other yearbooks.

Work is also under way in the Statistical Office on a *Supplement to the Monthly Bulletin of Statistics*, to provide brief descriptions of the technical features of the series published in the *Bulletin*. It is not sufficient to publish statistical tables, especially in an international publication, unless explanations are given about coverage and scope, methods used in compilation, and pertinent definitions and limitations. Without such explanations it is impossible to determine the degree of comparability of the statistics of different countries. The *Supplement* now in preparation is intended to provide a sufficient amount of such technical detail and qualifying information to permit reasonably adequate interpretations of the different series. It is expected thus to facilitate greatly the analytical use of the published statistics by organs of the United Nations, by the Specialized Agencies, and other users.

Although definite plans have not yet been formulated, consideration is being given to proposals for additional tables and other publications dealing with external trade. Considerable interest has been expressed in the resumption at an early date of the valuable work formerly carried on by the League of Nations in the publication of international trade statistics. Because so many of the Specialized Agencies are interested in various aspects of international trade, it is considered desirable to establish at an early date an integrated program for obtaining statistics on this subject from national governments, in order to provide in a systematic way the data needed by all agencies without duplication of requests.

The progress which is being made on all these publication projects is most gratifying, in view of all the difficulties which have had to be faced, and I hope that you will find cause to share this gratification. I hope even more earnestly that each of you will find an opportunity, before these meetings are over, to give us the benefit of your suggestions on how to make these publications more useful to you in your own countries. Since you necessarily contribute so large a share of the effort devoted to their preparation, and since this work is intended to serve your needs as well as the needs of the United Nations itself, your views should influence the compilation and content of these publications. This seems to me to be one of the principal purposes of this World Statistical Congress, and it should not be overlooked.

This brief review of the work on the publications of the Statistical Office illustrates the primary task of collecting statistics and making them available for use. While this work is of great importance, and constitutes the only major activity yielding an immediate and tangible end product, it is only one among several activities which comprise the work program of the Statistical Office. A second major function, which I shall now touch on briefly, is the day-to-day task of coordinating the statistical activities of all parts of the United Nations organization and the Specialized Agencies. It will be readily apparent, of course, that this function is not completely distinct from the task of collection and publication of statistics, but it is an integral part of these activities as well as of work on basic research and the development of standards.

These unique and complex problems of international statistical coordination were anticipated by the Statistical Commission in its recommendations to the Economic and Social Council dealing with the general division of responsibilities for statistical activities within the Secretariat and among the various Specialized Agencies. Specific instruments for coordination were provided in a standard text for incorporation in each formal agreement with a Specialized Agency, prepared by the Commission and later accepted by the Council. The articles of agreement relating to statistics are so drawn as to eliminate, or at least to minimize, the areas of possible duplication of effort, particularly with respect to collection of data from national governments. In general, agreement has been reached in terms which reserve to the Statistical Office of the United Nations the function of collecting statistics for purposes common to all or several of the organs of the United Nations and the specialized international organizations, but which leave to the Specialized Agencies the responsibility for collecting statistics peculiar to their fields of activity. Provision is made also for consultation on matters involving the interests of both the United Nations and one or more of the Specialized Agencies.

It is recognized that the Specialized Agencies have particular needs for detailed statistics which are uniquely relevant to their special fields of interest. The Food and Agriculture Organization, for example, requires detailed current data on the production, stocks and distribution of all agricultural commodities of major economic importance, to a degree far beyond the requirements of any of the organs of the United Nations or of any other Specialized Agency. Similarly, the International Civil Aviation Organization requires detailed statistics on the international aspects of air transport which are not directly within the field of interest of any other international organization. Some basic statistical needs, on the other hand, are common to all or to nearly all of the Specialized Agencies as well as to various organs of the United Nations. These include such general-purpose statistics as those of population, national income, production and trade, prices, and exchange rates.

To avoid duplication in the collection of such statistics, specific arrangements have been worked out with a number of the Specialized Agencies to give effect to the general terms of agreement. In the case of the International Labor Organization, for example, the Statistical Office has specifically informed national statistical offices that they are not asked to supply figures on employment, unemployment, wage rates and cost-of-living to the United Nations directly, as these figures are obtained from the ILO for publication in the *Monthly Bulletin of Statistics* and for other United Nations purposes. The Statistical Office, on the other hand, will provide to the ILO any general-purpose statistics needed by it.

Coordination in the collection of statistics, however, is not achieved by formal agreement or by specific allocation of responsibilities alone. Effective coordination also requires continuous collaboration on a wide range of statistical matters. Such collaborative relationships have been developed and are operating effectively. Difficulties inherent in the geographical dispersion of the headquarters of the Specialized Agencies complicate the problems, but there is reason to believe that appropriate and necessary means of coordination can and will be devised as occasion arises.

The working relationships between the United Nations and the Specialized Agencies are directed and strengthened by the activities of the Consultative Committee on Statistical Matters, which affords a means for periodic consultation among representatives of the statistical staffs of all the international organizations. Through this Consultative Committee the statistical needs of all the Specialized Agencies are reviewed so that appropriate arrangements for avoiding duplication can be made and so that all needs can be met.

It is expected that the work of this Committee will result also in important contributions to the development of standards and to the solutions of technical questions of common interest. Agreement has been reached through this means, for example, on the use of the year 1937 as a common base year for publication of index numbers. The Committee will also soon consider the selection of a common postwar base period, as well as other uniform standards for the publication of statistics, so that similar series will be presented in the same way in the publications of the several international organizations concerned. At its last meeting the Committee agreed upon a proposal for the mutual exchange of questionnaires, so that each agency will be fully informed about the requests for statistics being directed to national governments. The Committee will help in many other ways in planning coordinated statistical programs; it has already proved to be an important device in assuring cooperative action.

I do not wish to give the impression through this brief review of work on problems of coordination that all such problems are in fact anticipated and can be readily solved. As a matter of fact, the statistical needs and programs of the organs of the United Nations and of some of the Specialized Agencies have been by no means fully developed. In some cases work has yet to be undertaken on the development of statistical programs and activities. Moreover, new needs and new problems will arise which are altogether unpredictable. In general, however, it may be said that as statistical needs are determined and as problems of coordination arise, the procedures which now exist can be expected to provide the basis for new methods appropriate to the circumstances. One of the important resources on which we expect to draw increasingly is the advice of statistical offices of national governments. I hope that we may count on all of you here who hold positions in statistical offices of national governments to bear in mind our earnest desire to be fully informed of problems of coordination or lack of coordination coming to your attention, so that we may have the benefit of your advice and suggestions on such problems as they arise.

I turn now to what I consider to be the most significant mission of the Statistical Office, which is to promote the development and improvement of statistics and their international comparability. In the effective performance of this work lies the greatest task and the greatest promise for the future. National governments have made great progress in recent years in the development of standards applicable within their own statistical systems, and in many countries there has been very rapid expansion of statistical services and organization. An unusually favorable situation exists, therefore, for action looking toward improved statistical standards and practices throughout the world. Many countries are not only willing but eager to learn of the experience of other countries during this period of rapid development, and to apply the positive elements of this experience in their own statistical systems. The Statistical Office can speed this interchange of experience and thereby realize the existing opportunities for the rapid advancement of world statistics.

This work might include such tasks as developing general agreement among countries on uniform definitions and concepts in a great variety of fields; promotion of standardized practices applicable to publication if not to collection of statistics (as, for example, the use of standard class intervals for showing age distributions in population statistics); formulation of proposals for uniform systems of industrial and occupational classification; and technical work on statistical methodology such as the application of improved methods of sampling procedures to economic and social problems.

Several fairly extensive projects looking toward the improvement of statistics in particular fields have already been undertaken by the Statistical Office. In the field of population statistics, for example, the Statistical Office, in collaboration with the Population Division in the Department of Social Affairs, is assembling materials from all countries on recent and forthcoming national censuses of population and agriculture, housing, industry, and trade. These materials include descriptions of methods used, copies of questionnaires, definitions, field instructions, publications for the most recent censuses undertaken, and information about plans for the next census now anticipated in each country. Abstracts and summaries of this information are being compiled, to be distributed to all countries which may be interested so that they may consider these factors in planning for the various censuses that are expected to be undertaken about 1950. The data derived from national censuses are essential for international purposes, and their value is obviously greatly enhanced if they cover the same general time periods and are conducted in such a way as to provide comparable statistics.

In addition to the immediate purposes of this work which I have mentioned, it is intended to serve in other ways to improve international comparability of population statistics. The intensive study which is involved of the questionnaires, instructions, and definitions used in various countries, will make possible a more nearly exact determination of the degree of comparability in population statistics of different countries, thus leading in the end to permanent improvements in comparability.

The Statistical Office has also undertaken intensive work on analysis of the concepts and definitions used in various countries in the compilation of national income statistics. This analysis covers sources and methods used, technical problems encountered and the means devised for their solution, and other factors involved in the composition and structure of national income figures in different countries. As in the case of research on population statistics, this study is aimed at the development of standards and improved methods as well as a more exact interpretation of the figures which are now available.

Preparatory work is being done in a number of other subject fields, looking to the development of improved statistics of industrial production, international trade, transport, and other subjects. In some cases this work takes the form of intensive exploratory study and analysis of existing statistics of various countries to ascertain the initial steps necessary to achieve comparability. In others, as in the case of statistics of international trade, the task is one of consolidating and carrying forward progress which had already been made by the League of Nations.

Activities now under way on uniform systems of classification provide another illustration of the developmental work undertaken by the Statistical Office. Early attention has been given to the development of a standard classification of branches of economic activity. This task which is being carried on under the direction of the Statistical Commission and with the aid of a Committee on Industrial Classification appointed by the Commission, is one of several steps being taken on a long-range, comprehensive program to achieve greater international comparability in statistics. It brings up to date and extends the pioneer work of the League of Nations on the "minimum nomenclature of industries" recommended by the League's Committee of Statistical Experts for use in the classification of statistics of gainfully-occupied populations.

Work has been started looking toward the formulation of standards and techniques found to be generally applicable in the technical and practical aspects of statistical sampling. Great advances have been made in recent years in the improvement of sampling techniques and in the application of sampling methods to the collection of statistics on various types of social and economic problems. As you know, the Statistical Commission has considered that further extensions in the use of sampling methods offer great promise for the improvement of statistics generally, and for this reason they recommended the appointment of a Sub-Commission on Statistical Sampling. The results of the Sub-Commission's work will be available either through the publication of a manual on statistical sampling or through advice and consultation on sampling problems.

Other problems of technical statistical methodology are now receiving similar study as part of the activities of the Statistical Office. The preparation of the *Supplement to the Monthly Bulletin of Statistics*, for example, provides the basis for intensive study of a wide range of technical questions such as methods of birth and death registration, use of weighting factors in the construction of index numbers, and techniques of adjustment for seasonal variation.

This developmental work on standards and methods can be of the greatest benefit to the work of national statistical offices. The Statistical Office by reason of its publications, its coordinating and research activities, its close relationships with the statistical staffs of the Specialized Agencies, and its frequent contacts with experts and technicians of national governments and nongovernmental organizations, is in a position to serve as a clearinghouse for the receipt and exchange of information and expert advice on all questions having to do with statistical methods and improvement of the international comparability of statistics. Arrangements are being made as rapidly as possible to make these services more readily accessible to national governments through the preparation of further publications and provision for direct technical advice and assistance on specific problems. Further advancement and full utilization of results of this work, of course, depend in large part on the cooperation of national statistical offices in sharing their experiences in the development and application of improved statistical methods and in bringing to the attention of the Statistical Office the results of their own experience, and the particular methodological problems which should receive consideration.

I hope that you will consider, as I do, that the program of work of the Statistical Office which I have outlined is sound and useful. It is an ambitious program; it cannot be completed in the immediate future and not all segments of it can be undertaken simultaneously and with equal speed. Much of the program, however, is well under way, and at least a start has been made in every important segment. The statistical services generally have recovered from the difficulties resulting from the war. Necessary channels of communication which are essential to further progress have been re-established. If all of us can continue to work together in a spirit of cooperation and mutual understanding I feel confident that the progress in the solution of our common problems will be more rapid than ever before.

Résumé

Le role du Bureau de statistique dans l'oeuvre de l'Organisation des Nations Unies et des institutions spécialisées est important en ce que, d'une part, celui-ci sert d'organisme de *clearing* pour l'échange de renseignements statistiques, et d'autre part, fournit une direction et une coordination dans le développement de normes statistiques et de méthodes de collaboration.

Le Bureau de statistique de l'Organisation des Nations Unies a pour première tâche de répondre aux besoins des Conseils, des Commissions, et du Secrétariat en réunissant les statistiques disponibles de tous les pays. Cette tâche est en grande partie remplie par le *Bulletin mensuel de statistique* et par d'autres publications du Bureau de statistique. L'on a commencé à prendre des dispositions en vue de la publication d'un annuaire de statistiques démographiques ainsi que d'un annuaire général de statistique et d'un *Supplément* au *Bulletin mensuel.*

Comme seconde fonction importante le Bureau de statistique coordonne les activités statistiques de tous les rouages de l'Organisation des Nations Unies et des institutions spécialisées. Les rapports de travail entre l'Organisation des Nations Unies et les institutions spécialisées sont définis dans des accords officiels et orientés par un Comité consultatif sur les questions de statistique.

La mission réellement significative du Bureau de statistique est de favoriser le développement et l'amélioration des renseignements statistiques ainsi que leur comparabilité sur le plan international. A ce propos, le Bureau de statistique a entrepris l'exécution de projets relativement étendus: c'est ainsi qu'il a effectué des travaux dans le domaine des statistiques démographiques et de celles du revenu national, qu'il s'est efforcé de formuler des normes et des techniques pour les sondages statistiques.

Les progrès futurs et la pleine utilisation des facilités qu'offre ce Bureau dépendent en grande partie de la coopération des divers bureaux nationaux de statistique.

The CHAIRMAN expressed his hope that all those present shared in the sense of accomplishment which Mr. Owen's description of the work of the Statistical Office conveyed.

THE ROLE OF THE UNITED NATIONS STATISTICAL COMMISSION

by Herbert Marshall

Chairman, Statistical Commission of the United Nations

The increasingly complex social, economic, and political organization of mankind and the correspondingly greater demand for statistics has enhanced steadily the prestige of statisticians and given their field of endeavor a place of high importance among the social sciences.

If no wise corporation nowadays would attempt to conduct its affairs by guess or by rule of thumb, how much more must governments, with their greater range of operations, depend upon comprehensive statistical data of high quality to assist them in making policies? World War II demonstrated the indispensability of a thoroughly developed statistical organization as a basis for the controls necessary to wage total war. Now this postwar period presents a further challenge to national governments of the United Nations. There is required an international organization of statistics of a scope and quality hitherto unattained.

The important role which statistics must play in world organization has been recognized fully by the United Nations.

In the carrying out of its responsibilities under the Charter, which include "the setting up of commissions in economic and social fields," the Economic and Social Council considered "that it will require expert advice on statistical matters." One of its first actions, taken early in 1946, was the setting up of a Statistical Commission.

First among the recommendations in the report of the nuclear Commission, which was approved by the Economic and Social Council, was that providing for the creation of a permanent Statistical Commission of not more than twelve members, those members to be selected for their individual capacities and on the basis of technical competence.

The tasks set for the Statistical Commission by its predecessors, the nuclear Commission, were fourfold:

First—Statistical standardization. If statistics are to be used on an international scale they must, as far as possible, be standardized so as to furnish the maximum degree of comparability. There must be agreement on the definitions of concepts, of statistical units and also on classifications for international comparison. Real comparability can only be achieved by uniformity in definitions and classifications. This, of course, is a difficult task but every effort must be made to perform it.

Second—Promotion and development of national statistics. Even those countries which have the most highly developed statistical organizations will not have at the outset all the statistical data which will be required by the United Nations and the Specialized Agencies. There will be some countries which can supply but little. We must hope that governmental statistical organizations will develop where they do not now exist or be strengthened where they are now inadequate. In many instances statistical organizations will need to be adapted to the needs to be met. It is an objective of the Commission to give aid and impetus to such developments.

Third—Improvement of statistics and statistical methods generally. In order to achieve international comparability not only must there be uniformity in definition and classification but also common use of the best statistical methodology. In its report the nuclear Commission stated: "It is essential that the Commission and the Statistical Office play an active role in promoting continuously the adoption and use of the most valid and reliable statistics and statistical methods, including sampling and other modern techniques of collection and analysis. To further this end the Commission recognizes the need to provide opportunities for statistical personnel of countries supplying information to the United Nations to obtain education and training in statistics."

Fourth—Recommendations for the coordination of the statistical work of the United Nations and the Specialized Agencies. This is a task of outstanding importance. It is difficult because it requires on the part of all concerned a purely objective approach—the submerging of subjective views, of the ambitions of individuals or agencies, of the human tendency to defend vested interests or to magnify the importance of one's own particular sphere of activity. Such an approach, that is, one of wholehearted cooperation between the various organs and agencies of the United Nations, is the *sine qua non* of success in the achievement of the statistical objectives.

If the individual countries of the world who are the suppliers of data which are the raw materials of our work are to be bombarded with questionnaires from a number of sources without a clear indication that they are part and parcel of a closely integrated and thoroughly coordinated plan, there will be repercussions most unfavorable to the end in view. Every effort, therefore, must be made to avoid unnecessary questionnaires and requests for data which require duplication of effort.

This coördination is essential to ensure the most economical use of technical expertness which, as we all know, is in short supply. A high measure of coordination is also necessary so that when a Specialized Agency with special interests in a particular field collects information, provision will be made to take care of the interests of other agencies and of the central statistical office at the same time.

In addition to these four specific tasks which constitute a large part of the role of the Statistical Commission there is the omnibus requirement of "advising the organs of the United Nations on general questions relating to the collection, interpretation and dissemination of statistical information."

To these various tasks the Statistical Commission has been directing its efforts.

As now constituted, much of the work of the Statistical Commission is advisory. It makes recommendations to the Economic and Social Council on statistical policy, for execution by the Secretary-General.

The nuclear Commission urged the establishment within the Secretariat of the United Nations of an adequate, thoroughly competent central statistical unit to serve the statistical needs of all departments and organs of the United Nations. This unit now exists as part of the Department of Economic Affairs. It is staffed with an increasing number of statistical experts who are outstanding in their particular fields. There is close collaboration between the Commission and the Statistical Office. A member of the latter is Secretary to the Commission and there is frequent communication between the director of the Statistical Office and the officers of the Commission.

In the development of the statistical program the Commission, the Statistical Office, and the Specialized Agencies each have an important role to play. For example, the International Labor Organization occupies the field of labor statistics. Its conferences set standards and objectives for the development and international comparability of statistics in that field. But in its capacity as a clearinghouse for international statistics and as the organizer of statistics for the United Nations from the general point of view, the Statistical Office has an interest in the work of the ILO. Hence representatives from the ILO and the Statistical Office respectively sit in at each other's conferences. Apart from conferences there is a Consultative Committee on Statistical Matters to consider statistical programs in their entirety so that specialized interests are broadened out to meet the needs of all. Moreover, an objective of the Committee is to see that uniform procedure is maintained between all agencies. An example of the latter has already been quoted; there was the decision of the Consultative Committee on Statistical Matters on the use of 1937 as a common base year for publication of index numbers.

In this statistical network the Statistical Commission exists as a body which influences the direction of the activities. This is apparent from some of the recommendations which were included in its first report. For example, it recommended that work on statistics of "national accounts," including consideration of methods and international comparability, should be pursued as expeditiously as possible by the Statistical Office of the United Nations in consultation with the Specialized Agencies. It expressed the view that publication of national income and expenditure data should be undertaken promptly in order to provide comparable figures for as many countries as possible. Account was to be taken of statistical needs of the Economic and Employment Commission.

The program of work now in progress in the Statistical Office will permit it to comply with the recommendations of the Statistical Commission by having a study of national income statistics ready for publication early in 1948.

This will contain a comprehensive account of the concepts and definitions of national income actually used in various countries and the technical problems involved in the reconciliation of different concepts and practices looking toward the development of standards in this field. The publication will also record the statistics on national income now available and the adjustments that have been made in the figures to arrange them in comparable form.

This program in the field of national income statistics and the national accounts is an excellent example of the coordination of effort which leads to the achievement of the objectives of the Statistical Commission. In developing its program the Statistical Office has taken account of the good work done by the League of Nations in this field. It has taken cognizance of the needs of other Commissions and interested Specialized Agencies. It also stands ready to provide technical advice and assistance to any nation which desires help in organizing these statistics.

In the balance of payments field there has also been notable progress in collaboration and in the development of a program. The International Monetary Fund has special interests in these statistics and has initiated conferences to discuss concepts and schedules for the securing of data from national governments. The general interests emphasized by the Statistical Commission at its first session are taken care of at these conferences through the participation of experts in this field from the Secretariat of the United Nations. Thus, through collaboration between the Monetary Fund, the Statistical Office, and experts from individual countries, preparation for a statistical program is being made which will prevent duplication of effort, secure the most economical use of technical personnel, and at the same time serve the needs of all interested parties.

It was recommended by the Statistical Commission at its first session that demographic data concerning all the countries of the world be assembled and published by the United Nations. The Statistical Office and the Population Division of the Secretariat have worked in close cooperation and a general plan for a yearbook of demographic statistics has been prepared. This was discussed and approved by both the Population and Statistical Commissions at their recent sessions. A program for the development of population statistics for national governments, including a minimum list of questions, was also discussed and approved. The attainment of standard definitions and classifications has been given special emphasis in this program.

These examples indicate that many of the objectives and recommendations of the Statistical Commission will secure their implementation through the Statistical Office directly or through cooperative effort between the Statistical Office and the Specialized Agencies.

The Statistical Commission has other avenues for carrying out its functions. It has recommended the establishment of a Sub-Commission on Statistical Sampling. The Commission may also appoint special committees of its members to do special tasks.

In accordance with this procedure the Commission appointed a Committee on Industrial Classification. The choice of the subject as an assignment to its first committee was the result of careful consideration. The Commission was convinced that in no field of statistics was comparability more urgently needed than in statistics showing the character of economic activity in different countries. Comparability in the statistics of different countries with regard to what may be called "industrial classification"—classification of all branches of economic activity—was, therefore, accepted as a matter of major concern. It was known that several countries were considering a revised classification of economic activity and were anxious to learn what the Commission and the Statistical Office had in mind concerning this matter.

The Committee on Industrial Classification met immediately prior to the Commission's second session. It had before it a draft classification prepared by technicians assigned to the task by the members for Canada and the United States who were assisted from time to time by experts from other countries. At the meeting of the Committee technical experts were present from Canada, Norway, the United Kingdom, and the United States.

The report of the Committee, subsequently approved by the Statistical Commission, did not present a classification *de novo*. It took as its starting point the minimum classification of the gainfully-occupied population recommended by the Committee of Statistical Experts of the League of Nations. At least 80 percent of this classification was retained unchanged. Where changes were made they were designed to bring the classification into harmony with changes in economic structure which have taken place since the League did its work. As in the case of the League recommendation, the classification proposed is designed for use in the classification of persons in a population census as well as for various types of industrial inquiries in which individual establishments will be the reporting units.

It was decided by the Statistical Commission that this draft of a proposed international standard industrial classification should be circulated to the nations and to the Specialized Agencies for comments and criticism. A request is to be made that such comments should be transmitted to the Secretary-General of the United Nations not later than February 1, 1948, in order that they may be reviewed by the Committee on Statistical Classification in consultation with a group of technical experts. A revised draft then will be prepared for consideration by the Commission at its third session, which may be held in April 1948. The Commission plans to recommend this revised draft to the Economic and Social Council as a standard to achieve comparability in international statistics of economic activity.

At its first session the Commission, as authorized by the Economic and Social Council, established a Sub-Commission on Statistical Sampling. The nuclear Commission had recommended the creation of this Sub-Commission and in that connection had stated:

"The application of statistical methods to the collection by governments of sample data in various fields is a development of recent years. Up to the present it has been limited to a few countries in which competent statistical guidance has been available. Sampling methods have many advantages. The cost is only a small fraction of that required for complete enumeration. The investigating staff required is much smaller so that it is easier to give them necessary training and have the work carried out under adequate supervision. The results of a sample survey are available far more quickly, and it is possible to repeat a sample survey every year or at shorter intervals. By varying the size and design of the sample it is possible to secure results within any desired margin of "error" and even to exceed the accuracy of a poorly planned and badly administered complete enumeration. For all of these reasons extensions in the use of sampling methods offer great promise for the development and improvement of statistical information in all parts of the world."

The Sub-Commission on Statistical Sampling was directed by the Commission:

(1) to examine the status of the methods used in applications of statistical sampling in different countries and in different fields of subject matter;

(2) to give special consideration to the use of statistical sampling methods in meeting the actual needs of the United Nations, the Specialized Agencies, and non-governmental organizations brought into consultative status with the United Nations, with a view to filling gaps in the information needed by them;

(3) to examine the possibility of using sampling methods to assess the reliability of complete enumeration;

(4) to give special consideration to those fields in which sampling methods are to be preferred to complete enumeration in respect of reliability, speed, cost and other factors.

At its recent session the Commission in its report suggested to the Sub-Commission on Statistical Sampling "that it consider the desirability of formulating plans for a manual on statistical sampling, or the collection of research materials applicable to sampling problems and techniques, which would assist national governments in the development and improvement of this aspect of statistical practice. The attention of the Sub-Commission is drawn particularly to the need for applying sampling methods to agricultural censuses, family budget inquiries, as well as to population censuses and income statistics. The manual should emphasize the application of sampling techniques to practical problems rather than stress the developments of sampling theory."

This Sub-Commission will have its first meeting at the end of this month.

In the pursuit of its objectives the Commission has always kept in mind the important contributions made by the League of Nations Committee of Statistical Experts. As you are aware, some of the work done by the League has been taken over already. The *Monthly Bulletin of Statistics* now issued by the Statistical Office is surely a worthy successor to the League bulletin and it shows steady improvement. The recommendation of the Commission that a *Supplement* be prepared and revised periodically, describing in detail the statistical series from the various countries contained in the *Bulletin*, is in process of being implemented. A first issue is planned for publication this year.

In addition, the Statistical Office has undertaken the publication of certain unpublished technical studies prepared under the direction of the League of Nations Committee covering national income, banking statistics, and balance of payments.

The necessary editorial work on these reports has now been completed and arrangements are under way for their publication. Printing will commence in the near future.

There remains the comprehensive work previously performed by the League of Nations Committee of Statistical Experts. The nuclear Commission had advocated strongly that these activities should be taken over. The Statistical Commission endorsed this stand.

At its recent session the Commission passed resolutions, and requested that they be submitted by the Economic and Social Council to the General Assembly, concerning the transfer to the United Nations of functions and powers exercised by the League of Nations under the International Convention Relating to Economic Statistics signed on December 14, 1928.

It also approved a draft protocol to amend the Convention in certain respects. These involved the substitution of organs and officers applicable to the United Nations instead of those in the League organization, and the removal of a paragraph limiting the scope of the activities of the League Committee of Statistical Experts.

A word should be said concerning progress in the coordination of statistical activities between the United Nations and the Specialized Agencies.

At its first session the Statistical Commission requested in its report that the Secretary-General should make periodic reports at sessions of the Statistical Commission on progress achieved in developing administrative instruments, procedures, and agreements through which effective statistical cooperation may be secured between the United Nations and agencies brought into relationship with it.

The first report was made at the recent session of the Commission. It indicated that the Statistical Office in many desirable ways is now performing the function of statistical coordination, both within the organization of the United Nations itself and among the Specialized Agencies. It also indicated that the Specialized Agencies are cooperating cordially with the Statistical Office, directly and through the Consultative Committee on Statistical Matters.

The report for the second session of the Statistical Commission will, however, contain the following paragraph:

" The Commission nevertheless believes that constant vigilance particularly on the part of the Statistical Office will be required to maintain an appropriate articulation among the numerous parts of the developing international statistical system. The attention of the Secretary-General is called to the importance of developing and maintaining the Statistical Office as the central mechanism within the Secretariat of the United Nations to supply its statistical needs and coordinate its statistical interests. The Commission wishes particularly to thank the Specialized Agencies for their cooperation and to urge upon them their continued participation with the Statistical Office in its central coordinating responsibilities."

Finally, I should say something about action taken at the recent session of the Commission concerning future work. In considering the report of the Committee on Industrial Classification the Commission took note of the close interrelationships among classifications of industries, occupations, and others. It re-established and enlarged the Committee under a new name—the Committee on Statistical Classification.

Its responsibilities will include the preparation of a recommendation to the Commission of the steps which should be taken toward the standardization of the classification of commodities entering into external trade, classification by personal status, and the classification of occupation, taking into account the work previously done in these fields by the Committee of Statistical Experts of the League of Nations and by other international organizations. It is also to recommend to the Commission such other programs of statistical classification as it thinks necessary to promote international statistical comparability.

The Commission, in its report on the second session, recommended that the Statistical Office should include in its program:

(1) Estimates of real national income.

(2) Distribution of national income and statistics of personal income.

(3) Intensification of the compilation and publication of figures on external trade, generally similar to those previously provided by the League of Nations.

(4) Continuation of the collection and analysis of existing statistics on transport in various countries with a view to appraising their comparability. Account is to be taken of the statistical needs and views of the Transport and Communications Commission and the work of other international organizations in this field.

In considering its future work the Statistical Commission at its last session deemed it advisable to establish a Committee on Future Work, which is to review systematically the statistical work accomplished and the recommendations made by the League of Nations Committee of Statistical Experts, by other international organizations and national governments.

As a basis for the Committee's work, the Secretariat is requested to prepare a memorandum indicating the applicability of these recommendations to current international statistical needs.

The Committee on Future Work is to review the memorandum of the Secretariat and to recommend to the Commission at its third session a work program for the Commission. Priorities are to be indicated and to the extent possible the Commission will formulate the specific steps which should be taken in respect to any item.

I hope that this summary account has given you some idea of the role which the Statistical Commission is playing in the United Nations. We have high objectives. Some of them will be attained in the short run; others can be achieved only after years of sustained effort.

It must not be thought that our program is too comprehensive, that we are preempting all fields and leaving nothing for others, particularly nongovernmental organizations. There is abundant work for all. There is a great need for supplementary efforts by nongovernmental organizations. If, for example, such organizations were to enter the field of national income or sampling, that would be all to the good, for the Commission and the Statistical Office would benefit by their efforts.

We should remember that the Commission is concerned primarily with the practical problem of setting up a comprehensive and coordinated international system of statistics and their dissemination. Every contribution to improve methods will help toward this goal. We should remember, too, that the United Nations has the authority to suggest to the nations the adoption of methods and classifications, which is not the case with nongovernmental organizations.

I close therefore on this note: that there is a task ahead of us which requires not only the best efforts of the Statistical Commission, the Statistical Office, and the Specialized Agencies, but also the cooperative efforts of all statistical organizations wherever they may be found.

Résumé

Le Conseil économique et social, considérant qu'il aurait besoin de conseils autorisés en matière de statistique pour s'acquitter des tâches qui lui incombent en vertu de la Charte, a créé, au début de l'année 1946, une Commission de statistique.

La Commission de statistique a été chargée des tâches suivantes: 1) normalisation des statistiques; 2) encouragement et développement des statistiques nationales; 3) amélioration des statistiques et des méthodes statistiques en général; 4) coordination des travaux statistiques de l'Organisation des Nations Unies et des institutions spécialisées. En outre, la Commission de statistique est chargée de donner des avis aux divers organes des Nations Unies sur des questions générales relatives aux statistiques.

Il existe au sein du Département des questions économiques un Bureau de statistique qui travaille en liaison étroite avec la Commission de statistique. Un grand nombre des tâches assignées à la Commission de statistique et des recommandations de celle-ci sont exécutées par le Bureau de statistique, seul ou en collaboration avec les institutions spécialisées.

La Commission de statistique s'acquitte également de ses fonctions par l'intermédiaire de sous-commissions et de comites spéciaux au nombre desquels figurent: une sous-commission de sondages statistiques, un comité de la classification industrielle (appelé désormais comité de la classification statistique) et un comité des travaux futurs.

Le Comité des travaux futurs devra passer en revue les réalisations et les recommandations du Comité des experts statisticiens de la Société des Nations ainsi que celles d'autres organisations internationales et des divers gouvernements et il devra recommander, à la troisième session de la Commission, un programme de travail pour la Commission de statistique.

Following Mr. Marshall's address, the CHAIRMAN remarked that this was only one of a group of related meetings concerned with the statistical work of international organizations in various fields. He pointed out that the statistical activities of the several Specialized Agencies would be described at later meetings, and also that the particular activities of the Statistical Office in the development of international comparability of statistics would be considered, and details presented of progress in the development of statistics of national income and population. He then called for discussion on the general aspects of statistical activities of the United Nations covered in the address of Mr. Owen and Mr. Marshall.

Mr. Philip J. IDENBURG (Netherlands) raised the question of the need for the "horizontal coordination" of the statistical organs of the national governments in some sort of regional organization, citing his own experience in cooperation with his colleagues from Belgium and Luxemburg in the sphere of the Benelux Customs Union, which promised to result in comparable statistics of international trade and comparable indices of prices and wages, etc. He stressed the point that any such regional form of cooperation must be coordinated with the work done by the Statistical Office of the United Nations and by the Specialized Agencies.

The CHAIRMAN stated that suggestions had been made for such regional organizations under the Economic and Social Council but that opinion was still divided on the subject. There being no further discussion, the meeting was adjourned.

STATISTICAL ACTIVITIES OF SPECIALIZED AGENCIES

Wednesday, September 10, at 9:30 a.m.

CHAIRMAN:

Stuart A. Rice

Member from the United States and Rapporteur Statistical Commission of the Economic and Social Council

The CHAIRMAN made some introductory remarks about the general relationship among the principal parts of a developing world statistical system, consisting of the United Nations, the Specialized Agencies, the statistical offices of the national governments and the scientific and professional organizations of statistics, all of which were represented at the International Statistical Conferences. At this particular meeting, reports were to be heard from the various Specialized Agencies of the United Nations, each of which had its own statistical interests but all working in intimate relationship with the Statistical Commission and the Statistical Office of the United Nations. He then introduced in turn the representatives of the various Specialized Agencies, who reported on the statistical activities of their respective organizations, as follows:

THE ROLE AND WORK OF THE INTERNATIONAL LABOR ORGANIZATION IN INTERNATIONAL STATISTICS

by Robert M. Woodbury

Chief Statistician, International Labor Office

The field of work of the International Labor Organization covers the interests and welfare of labor, as described in the Constitution of the Organization and as interpreted in the acts of the International Labor Conferences.

The field of work of the International Labor Organization in labor statistics covers in general the same ground. From the beginning the importance of statistical information as a basis for labor policy has been recognized. One of the duties of the Organization specified in the Constitution is "the collection and distribution of information on all subjects relating to the international adjustment of conditions of industrial life and labor."

THE STATISTICAL WORK OF THE INTERNATIONAL LABOR ORGANIZATION

The scope of the statistical work of the ILO may be illustrated by means of the statistical publications of the Office over the period of more than a quarter century of its history. The *Year Book of Labor Statistics* in its latest edition contains thirty-one tables covering nine major fields of labor statistics, including the gainfully occupied population, employment and unemployment, hours of work, wages, cost of living and retail prices, family living conditions, migration, industrial accidents and industrial disputes. The *International Labor Review* includes tables on current figures of employment and unemployment, hours of work, wages and earnings, cost of living, as well as annual tables of retail prices of a list of foods and fuel, wage rates or earnings per hour in a list of occupations in the principal cities in different countries, and international comparisons of food prices. In addition, the ILO statistical publications include, in the statistics series, studies and reports on these topics, and on international comparisons of real wages, food costs, rents, maritime statistics, industrial mortality and morbidity, and the work of the Office in the field of international standardization of labor statistics;[1] while publications in other series include statistical materials, for example, on the textile industry and the coal mining industry; the studies on workers' nutrition and social policy, the worker's standard of living, social insurance, etc. The setting up of industrial committees for certain major industries, the textile industry, the coal mining industry, the inland transport industry, etc., call for the collection and compilation of labor statistics in these industries.

This list of topics showing the scope of the statistical work of the Office is intended to be illustrative rather than exhaustive. Other topics also are within its field. In some cases little may have been done up to now to develop them. As example may be cited the statistics of family allowances in relation to wages. Little has been done to obtain satisfactory data on the extent to which social insurance payments affect workers' incomes; though on this topic, the Office has compiled data affecting coal mine wages in European countries.

The statistical work of the International Labor Organization includes a number of different activities. First, the compilation of statistical materials from the different national sources to form international tables; secondly, the collection of materials by means of questionnaires addressed to the different Governments; thirdly, the preparation of reports dealing with statistical methods used in different countries; fourthly, the preparation and convening of International Conferences of Labor Statisticians to consider topics of labor statistics; fifthly, the preparation of Draft Conventions dealing with statistics on labor topics; sixthly, the sending out of experts, on request of the different governments, to survey their statistical work and to make recommendations for improvement where such recommendations are sought; and finally, in general the furnishing of statistical materials to other international organizations and agencies, as well as to national governments. This last phase is taking naturally an increasing importance, as the role of the Office in furnishing materials on labor topics to the several international agencies assumes a larger place.

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[1] *The International Standardization of Labor Statistics,* ILO Studies and Reports, Series N, Number 25,

Of special interest are studies in which new technical problems in international statistics have to be examined. Those include, for example, international comparisons of costs of living—food, rent, clothing, miscellaneous items—international comparisons of real wages, and international comparisons of food consumption per consumption unit.

Of equal importance is the problem of international standardization of methods and procedures, a subject to which I shall return later.

New aspects of the statistics in certain of these fields will naturally receive greater emphasis in the future than in the past. For example, one topic in which the Office is much interested and on which it hopes to be able to add significant statistical materials to its *Year-Book of Labor Statistics*, is social insurance. It would be premature to give details of the coverage planned for this topic, but some phases of the work in this field are dealt with in a paper to be given at another meeting. At this point I need only say that the Office hopes to be able to make a useful contribution to international statistics on this topic.

The recent meeting of the Sixth International Conference of Labor Statisticians in Montreal called attention to a series of problems in international statistics which need to be studied by an international organization equipped to handle the problems in the field of labor statistics. To these the International Labor Office will have to give its attention.

It remains to discuss the relationships with the United Nations and other Specialized Agencies, and to devote a little more attention to the special task of international standardization of labor statistics.

RELATIONS WITH THE UNITED NATIONS AND OTHER SPECIALIZED AGENCIES

The role and work of the Statistical Office of the United Nations, the Statistical Commission and the Consultative Committee on Statistical Matters are being discussed at other sessions of the World Statistical Congress from the point of view of the United Nations. The relationship between the United Nations on the one hand, and the International

Labor Organization on the other, in regard to statistical matters is governed by the article on statistics in the agreement reached between the two organizations.[2]

Under this agreement, the International Labor Organization is recognized as the appropriate agency for the collection, analysis, publication, standardization and improvement of statistics in its own field. The field of work of the International Labor Organization is recognized as that defined in its Constitution, as interpreted by acts of the International Labor Conferences. The purport of the agreement is thus to give to the International Labor Organization the responsibility to collect, analyze and publish labor statistics—including statistics dealing with labor topics such as the income, expenditure, standards of living, and welfare of labor—as well as responsibility for the standardization and improvement of statistics in these fields. It follows that in the field of international statistics the International Labor Organization should furnish these statistics as needed to the United Nations Statistical Office and to other international organizations.

Arrangements have already been made for furnishing statistics on cost of living, employment, unemployment and wages to the United Nations Statistical Office for its *Monthly Bulletin of Statistics* and for furnishing also detailed informations on methods followed in computing the data. Arrangements for cooperation with other international agencies in the statistical field are in process of being worked out.

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[2] The principal provisions are as follows:

General provisions are made for maximum cooperation, elimination of all undesirable duplication, the most efficient use of technical personnel, combination of efforts, and minimizing demands on national governments.

The International Labor Organization recognizes the United Nations as the central agency for the collection, analysis, publication, standardization, and improvement of statistics serving the general purposes of international organizations.

The United Nations recognizes the International Labor Organization as the appropriate agency for the collection, analysis, publication, standardization, and improvement of statistics within its special sphere, without prejudice to the right of the United Nations to concern itself with such statistics so far as they may be essential for its own purposes or for the improvement of statistics throughout the world.

Other clauses provide for the establishment of administrative instruments and procedures to secure effective statistical cooperation, for the avoidance of duplication of collection of statistical information by the United Nations or any of the Specialized Agencies whenever it is practicable for any of them to utilize information and materials which another may have available, and for the establishment of a center of statistical information for general use, for which the International Labor Organization agrees to make available to the United Nations, so far as practicable, the data supplied to it for incorporation in its basic series or special reports.

Mention should be made in particular of arrangements for providing for representation of United Nations, the Food and Agriculture Organization of the United Nations and other Specialized Agencies at conferences called for discussing statistical questions. At the Sixth International Conference of Labor Statisticians, the United Nations, the FAO, the ICAO and the International Monetary Fund were represented.

With regard to the problems of overlapping jurisdiction and duplication of effort in statistical work among international organizations, the following points should be noted:

In the first place, the jurisdiction of the International Labor Organization is specified in its Constitution and is in terms of the interest of labor. It does not necessarily follow that there is undesirable duplication of effort, if another organization having a different interest cultivates a specific topic in which both organizations have definite and different interests.

Secondly, the jurisdiction of the International Labor Organization with respect to statistics relates not only to collection of statistics but to their standardization, development and improvement. For more than a quarter of a century the Organization has been working to bring about improvements in the quality, quantity and international comparability of labor statistics. Its accomplishments are well recognized and it expects to carry forward this work in the future. There is of course no need for any other international organization to enter this field.

Thirdly, agencies have been set up by the United Nations intended to reduce or eliminate duplication of effort. These include the Consultative Committee on Statistical Matters on which the United Nations and the various Specialized Agencies are represented, and the Statistical Commission at the meetings of which the Specialized Agencies may send nonvoting representatives.

This is perhaps not the place to discuss in detail the legal aspects of these arrangements. They have already been discussed in another meeting of the Congress. Much depends on how the arrangements work out in practice. Suffice it to say that the arrangements appear to rest more on voluntary collaboration and cooperation than upon authority. A great deal depends upon the measure of goodwill and cooperation shown by the different interested organizations.

In this relationship the International Labor Organization is anxious to give the fullest measure of collaboration with the United Nations and other international organizations by providing them with statistical material on labor topics which it collects and which the other international organizations indicate they would like to have. In this collaboration we shall endeavor not only to furnish the materials published in the different countries but also whenever an international agency indicates a new line of attack on an old problem or a new method of using old material, we hope to be able to respond to these new demands and acquit ourselves of the responsibility of developing the field of labor statistics to its fullest possibilities.

There remains one topic of special interest which deserves special treatment, namely, international standardization of labor statistics, to which I should now like to draw your attention.

DEVELOPMENT OF TECHNIQUES FOR PROMOTING INTERNATIONAL STANDARDIZATION OF LABOR STATISTICS

Five principal techniques have been employed by the International Labor Office over the past twenty-five years for improving and standardizing labor statistics. First and foremost, the calling of a series of International Conferences of Labor Statisticians which has only been interrupted by the war has set in motion an interchange of information and ideas and has led to agreement on basic definitions and methods for improving labor statistics. It was obviously appropriate for the international organization dealing with labor questions and with labor statistics needed to throw light upon these labor problems to call the official statisticians in the different countries to meet together with a view to settling on the best methods of developing their statistics, and of lessening the differences that made international comparisons difficult. (A separate document on these conferences has been prepared for distribution to the members of the World Statistical Congress, including the principal resolutions adopted by the Sixth International Conference of Labor Statisticians which met in Montreal, August 4-12, 1947, which are communicated to the members of the World Statistical Congress for their information by special authorization of the Governing Body of the International Labor Office.)

A second device has been the publication of labor statistics on a comprehensive plan in the *International Labor Review* and in the *Year-Book of Labor Statistics*. The growth of the scope of the statistical series in the *Year-Book* emphasizes the remarkable development that has taken place in the field of labor statistics in the past twenty-five years. The publication of statistics on a systematic plan undoubtedly has helped to stimulate the different countries to compile statistics on these subjects and to compile them in conformity with minimum standards set. It contributes to an awareness of the special problems of international standardization, since in some fields at least, the difficulties in making satisfactory comparisons are so evident.

A third technique has been the sending of experts to make surveys for studies of local statistical problems, on request of the particular government, resulting in a recommendation on points on which advice is asked.

With these efforts may be grouped also the correspondence with the statistical offices of the different countries, leading to a better understanding of local problems and local statistics, and in many cases to modifications of the local techniques to accord with the standards set by the International Conferences of Labor Statisticians.

A fourth technique is in the work of the Committee of Statistical Experts of the International Labor Office. The Committee has broken new ground in the exploration of such problems as international comparisons of food costs and rents. This type of international problem, furthermore, is one in which national governments ordinarily do not concern themselves: it is left to an international agency. But in reaching a satisfactory solution, steps must be taken toward international standardization of the relevant statistics.

Fifthly, the whole series of publications of the Office in the field of labor statistics is directed toward international standardization and the improvement of statistics in the field. To a certain extent this has already been covered in the statement on the work of the International Conference of Labor Statisticians for which many reports on statistical methods have been prepared. But these reports furnish materials ready on hand whenever the statistical offices of any country wish to review or revise their statistical methods and thus they continue to exert a steady influence on the developing standards in the different countries.

Finally, and not least, is cooperation with other international agencies in improving labor statistics and in developing techniques for international standardization. This has included in the past not only cooperation with the League of Nations and its Committee of Statistical Experts, its Health Organization, the Committee on Road Transport, the Institute of Intellectual Cooperation and the Economic, Financial and Transit Department of the League, but also with the International Institute of Agriculture, the International Statistical Institute, and the Inter American Statistical Institute.

This cooperation will be maintained with the United Nations and its organs as well as with newly established international organizations in various special fields, each of which will be concerned with international standardization and improvement of statistics in its own field.

One may well consider, therefore, that the future of international standardization at the present time looks especially rosy. With new aims, with greater demands for statistics on the part of international organizations equipped to make good use of them and pressing for improvements in statistics necessary to meet their requirements, the next decade is likely to witness a remarkable expansion of statistics, including labor statistics, and a steady improvement in comparability on the international plane.

Résumé

Un des devoirs que sa constitution impose à l'Organisation internationale du travail est " la centralisation et la distribution de toutes informations concernant la réglementation internationale de la condition des travailleurs et du régime du travail."

L'oeuvre de l'OIT, en matière de statistiques, consiste à 1) rassembler les données statistiques d'origine nationale diverse; 2) recueillir les données au moyen de questionnaires adressés aux gouvernements; 3) rédiger des rapports traitant des méthodes statistiques utilisées dans différents pays; 4) réunir des conférences internationales de statisticiens du travail; 5) rédiger le projet de convention relatif aux statistiques du travail; 6) envoyer des experts sur la demande de différents gouvernements, pour étudier le fonctionnement de leurs services statistiques et faire des recommandations à ce sujet; 7) fournir des données statistiques aux autres organisations internationales et aux gouvernements nationaux.

Dans ses relations avec les Nations Unies et les institutions spécialisées, l'OIT est reconnue comme étant l'institution chargée de recueillir, analyser, publier, normaliser et perfectionner les statistiques du travail, notamment celles qui traitent de sujets comme les revenus, les dépenses, les niveaux de vie et le bien-être des travailleurs.

Mentionnons particulièrement les principales techniques qui tendent à favoriser la normalisation internationale des statistiques du travail, grâce à une série de conférences internationales des statisticiens du travail, à *la Revue internationale du travail, l'Annuaire des statistiques du travail* et autres publications, à l'oeuvre du Comité de statisticiens de l'Organisation international du Travail et à la coopération avec d'autres institutions internationales.

THE ROLE AND WORK OF THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS IN INTERNATIONAL STATISTICS

by Valentino Doré

Consultant, Statistical Standards Branch, Food and Agriculture Organization of the United Nations

After the Hot Springs Conference, five technical committees were set up, charged with the preparation of basic documents and recommendations for the future work of the Food and Agriculture Organization of the United Nations. The fact that one of these was a Statistical Committee indicates the important role envisaged for statistics in the entire program of the new Organization.

The aims of FAO as presented in the Preamble of its Constitution can be summarized as follows:

(a) To raise levels of nutrition and standards of living in the various member nations;

(b) To increase efficiency in the production and distribution of all food and agricultural products; and

(c) To improve the condition of rural populations and thus contribute toward an expanding world economy.

Since any national or international action to achieve these aims presupposes exact and complete knowledge of the actual situation, it is logical that the first article of the FAO Constitution should establish as a function of the Organization the collection, analysis, interpretation, and dissemination of information relating to nutrition, food, and agriculture. It is evident, also, that an important part of the necessary information must be in the form of statistical compilations.

The domain of statistics in the work of FAO is very extensive. In effect, it covers agricultural production in all its numerous branches; international trade, utilization, and prices of agricultural products; forestry products; fisheries, and nutrition in its various aspects. It also applies to a series of demographic, economic, and technical factors which affect production and consumption; agricultural population and labor; distribution of land ownership; land tenure; rural buildings and farm equipment; chemical fertilizers, pesticides, and fungicides; wages of farm workers; prices of agricultural requisites; agricultural income, credits, loans, etc.

For FAO, as for the other international organizations, statistical work comprises three basic groups of closely correlated tasks:

(a) Assembly of data existing in the different countries and their analysis, interpretation, and critical examination in the light of a thorough study of the organization of national statistical services as well as of their methods of work, their classifications, and their definitions;

(b) Analysis and publication, on an international basis, of all data available; and

(c) Activity aimed at improving national statistics and introducing uniform classifications and definitions in order to obtain international statistics based on complete, precise, and comparable data.

FAO is developing its activities in all three of these directions.

But the work under way can be accomplished and strengthened only through a continued cooperative effort. Success in publishing international statistics that will have significant value for the member nations will depend directly upon the extent to which these member nations provide the Organization with the necessary data.

FAO considered its first duty to be the assembling of some fundamental statistical data pertaining to basic problems.

On agricultural output and trade. such data could be obtained by bringing up to date the *International Yearbook of Agricultural Statistics* previously published by the International Institute of Agriculture in Rome, the last edition of which had appeared in 1941. Following the merger of the Institute with FAO, the staff in Rome was asked to prepare the *International Yearbook of Agricultural Statistics 1941-42 to 1945-46*. This was published in the spring of 1947 in three volumes, as follows: Volume I : Agricultural Production and Numbers of Livestock; Volume II: International Trade; Volume III: Apportionment of Areas, Agricultural Production, and Numbers of Livestock in Various Countries.

Compilation of basic statistics on food consumption was more difficult because of the lack of available data in almost all countries and because of the fact that international statistics of this kind had never before been published. Nevertheless, by utilizing available data and evaluations, carefully checked and converted to a uniform basis, it was possible to obtain a general view of the prewar food situation in seventy countries, containing approximately nine-tenths of the world's population. The results of this investigation were published in a volume printed in July 1946 under the title, *World Food Survey.*

In order to establish world statistics on forestry, a preliminary fundamental study was necessary. To this end a special questionnaire on world forestry resources (area and classification of forests, growing stock on accessible forests) and on annual growth and annual drain has recently been sent to the governments concerned. Its aim is the drafting of a *Forest Inventory 1947*, which will probably be published next year. A program for a forestry industries census in 1950 is now being studied.

Preliminary work has also been done on the very complicated problem of fisheries statistics. A questionnaire concerning catches and their utilization and a study of the problems relating to a general fisheries census have been prepared.

Besides this fundamental work, FAO has established current information services that enable the Organization to follow the general situation and the trends in production and consumption as closely as possible and in the most complete and rapid manner. These services rely mainly upon the collaboration of the statistical services in the different countries, but they also utilize all other available sources. These activities, however, are not confined to assembling figures for current statistical publications or to enable FAO to issue precise and up-to-date periodic surveys on the general agricultural and food situation and on some of the more important agricultural products; they may also provide at any specific moment statistical information required by special circumstances calling for action on the part of FAO.

Owing to this organization, FAO has been able to publish, or to prepare for immediate publication, a series of statistical surveys as well as studies based mainly on statistical material.

The *FAO Yearbook of Agricultural Statistics 1946* must be mentioned first among the current publications of a more specific statistical character. It continues, on a wider scale, the yearbooks published in the past by the International Institute of Agriculture. The work will be in two volumes, of which the first, pertaining to agricultural production, is already printed, and the second will be ready before the end of this year. Two parallel publications will be the *Yearbook of Forestry and Forest Products Statistics* (of which the first issue, containing data on 1945 and 1946, is in preparation) and the *Yearbook of Fishery Statistics*.

The quarterly publication, *Economic Review of Food and Agriculture*, that has recently appeared will regularly contain current statistical information on production and consumption of agricultural products. Similar information on production, stocks, and international trade in forestry products will appear in the review, *Unasylva*, and current statistics on fishing will be published very soon. Plans for the issuance of a monthly statistical bulletin are now under consideration by FAO.

Statistics also represent the fundamental basis of a series of bulletins intended to supply an accurate periodic picture of supply and demand trends in certain important products or groups of products. Some of these bulletins have already appeared and others are under way; they deal with wheat, rice, sugar, fats and oils, textile fibers, livestock and animal products. It is essentially on a statistical basis also that FAO has been able to develop its periodic surveys: the *World Food Survey*, which deals with the general world situation from the standpoint of food production and nutrition standards; the *World Fiber Survey*, which is concerned with textiles in terms of their availability and demand; and the *World Agricultural Survey*, which is a study of the general agricultural situation.

Furthermore, the statistical information collected by FAO has been extensively used in the preparation of documents and surveys intended for special purposes, such as the reports on basic commodities drafted for the Preparatory Commission on World Food Proposals; the statistical documents for the International Timber Conference at Marianske Lazne; the memorandum, "The Rice Economy in Asia," prepared for the Rice Conference at Trivandrum, India; the notes on the food situation in various countries, prepared for the Secretary-General of the United Nations at his special request; and, finally, a long series of commodity reports and summary statements on the food and nutrition situation, recently submitted to the FAO Conference at Geneva.

It is obvious that the value of FAO's statistical work and the usefulness of the conclusions drawn from it depend largely upon the quantity and quality of the available data.

Although in the past few years several countries have considerably developed their statistics on problems with which FAO is concerned, there are still wide gaps in this information almost everywhere. In many countries these statistics are extremely rudimentary, largely approximate, and limited to a very small number of questions. There are important regions where no proper statistical services exist and the available statistical information represents only the merest guesswork. Furthermore, from an international viewpoint, it is not sufficient only that the statistical information of each country be correctly established. It is also necessary that the data obtained in the various countries be comparable. This aim is still far from realization because of the differences that still exist in the definitions and classifications used in the national statistics of the various countries.

In the field of unification and improvement of national statistics, therefore, FAO has a very important task to perform.

Improvement of statistical methods, extension of surveys to subjects that have so far been neglected, introduction of definitions and classifications that will meet the requirements of international statistics—these can be carried out only by the individual countries. But FAO must encourage and promote this development and must assure efficient international cooperation to this end by establishing the rules by which the necessary improvements may be gradually achieved.

The work involved is a long-time project demanding continuous effort. The relationships already established by FAO with the statistical bureaus of the various countries (which, it is hoped, will become increasingly close), as well as the activities of the FAO National Committees, should facilitate its achievement. But in many cases this will not suffice. Many problems must be considered in collaboration with the statisticians of the services concerned in order that they may be resolved by a common accord. Facilities should be placed at the disposal of those countries where organization is less advanced, so that they may take advantage of the experience acquired elsewhere; assistance should be given in the training of qualified personnel and in the use of mechanical tools; measures should be taken to spread the knowledge of improved statistical methods, to encourage the exchange of statisticians among the different countries, to increase the possibilities of direct contacts among persons dealing in the various countries with statistical problems pertaining to FAO activities.

FAO, fully realizing the importance of the task that must be accomplished in this field, has already initiated some projects. One of the most important is a project for a World Agricultural Census, to be carried out uniformly and almost simultaneously in the greatest possible number of countries. A preliminary draft of such a program, based on the suggestions of a special Committee of Experts, has already been submitted to the consideration of member countries. The plan has been studied in detail by a conference of European statisticians especially called in Rome for this purpose in March 1947, and it was discussed further in a meeting of American statisticians during the Washington session of the Inter American Statistical Institute; it will be further discussed in similar meetings that are to be held for the countries of the Near East and the Far East respectively in the course of this year. Following these meetings, FAO will be in a position toward the end of the year to prepare the definitive plan for the World Agricultural Census in 1950 on the basis of agreements internationally reached. Numerous countries have already agreed to take part in the Census, and it seems certain that it will contribute significantly to the progress of agricultural statistics in the national as well as in the international field. Besides the direct results that will be obtained by this world survey based upon a unified program, the Agricultural Census will also offer in many cases a solid foundation and a starting point for the development and improvement of current statistical services where such information is still incomplete or imperfect; and it should even contribute to the initiation of such services in countries where they do not yet exist.

The possiblitities envisaged in this plan have led FAO to increase its efforts for the success of the World Agricultural Census and to take measures that will facilitate the work of the Census, especially in the countries not yet advanced in the field of statistics, and at the same time contribute to the improvement of statistical services.

Among the measures that it proposes to carry out, the following are worthy of mention:

(a) Organization by FAO of special training courses for the benefit of member governments desiring to have trained personnel for the Census work and for agricultural statistical work in general;

(b) Organization, through FAO channels, of an exchange of agricultural statisticians, to make it possible for these specialists to study statistical organizations and methods of other countries on the spot;

(c) Distribution to the offices concerned, through FAO, of information and documents relating to the Agricultural Census and the statistical organizations of the more advanced countries, as well as information on studies, research, and results achieved in the application to agriculture of special statistical methods, such as sampling;

(d) Establishment of direct contacts between qualified FAO personnel and the persons working in the different countries on the Census and on agricultural statistics in general, in order to insure a close and effective liaison; with this end in view, FAO intends to appoint a statistical consultant for each of its regional offices.

The activity of FAO in connection with forestry statistics is another example of the means that it is using to improve and unify statistical methods. In order to assemble figures for the forestry inventory and for periodical statistics on production, stocks, and international trade, it recognized that a preliminary agreement must be reached on the definitions and terms to be used and on the classifications to be adopted, so that the figures obtained would be comparable on an international basis. Immediately following the preliminary drafting of the forestry questionnaires, therefore, one of the first tasks of FAO was to submit the documents, complete with definitions and necessary explanations, to the approval of the bureaus concerned in the various countries. It then submitted them for discussion and approval to two meetings of experts, one at Washington for the non-European countries and one at Rome for the European countries. The result of these conferences was the adoption for the forestry questionnaires of definitions and classifications established by mutual agreement, whose general use will unquestionably bring about a great improvement in this important statistical branch.

In the near future FAO will take under consideration, with the cooperation of the countries concerned, a great number of other general and specific problems, in order to arrive at adequate solutions in the national and international fields. The establishment of international fisheries statistics is urgently needed. All problems relating to nutrition statistics are still to be studied thoroughly, and some research on methods employed in the statistical surveys on the nutritional standards of different classes of the population has been started. Several branches of agricultural statistics—concerning, for example, labor, fertilizers, agricultural machinery—still need to be systematically rearranged.

While continuing its program of collecting and utilizing statistical data, FAO plans at the same time gradually to extend its effort toward improving and unifying statistical methods in all the fields of its activities. The work already accomplished during the short period of FAO's existence justified the faith that the achievements envisioned in this program will be realized.

Résumé

La Constitution de l'Organisation de l'alimentation et l'agriculture, en énonçant les fonctions de l'Organisation, dispose qu'elle "rassemblera, analysera, interprétera, et distribuera des renseignements relatifs à la nutrition, l'alimentation, et l'agriculture." Le domaine statistique où s'exerce l'action de l'Organisation s'étend à toute une gamme de sujets.

L'OAA a rassemblé des renseignements statistiques de base sur la production et le commerce agricoles, la consommation des denrées alimentaires et les ressources forestières. Elle a effectué quelques travaux préliminaires dans le domaine de la statistique des pêches. Elle a créé des services de renseignements d'actualité avec la collaboration des services statistiques nationaux et en utilisant toutes les autres sources disponibles.

Parmi les publications de l'Organisation existantes ou en projet, on peut citer: *l'Annuaire international de statistique agricole de 1946*; *l'Annuaire statistique des fôrets et produits forestiers* et *l'Annuaire de statistique des pêches*; la *Revue de l'économie agricole alimentaire* (trimestrielle); *Unasylva*; une série de monographies consacrées à d'importants produits ou groupes de produits; les périodiques: *Estimation des ressources alimentaires mondiales*, *Situation mondiale des fibres textiles*, et *Situation mondiale de l'agriculture*.

Dans le domaine de l'unification et de l'amélioration des statistiques nationales, l'OAA a mis en chantier certains projets, dont le plus important est le Recensement agricole mondial de 1950; son plan fait l'objet de l'étude d'une conférence de statisticiens des pays européens, une réunion de statisticiens américains l'a discuté; il sera soumis à de nouvelles discussions, dans le Proche-Orient et dans l'Extrême-Orient respectivement. On a proposé certaines mesures pour faciliter le travail du recensement. On est parvenu également à un accord préliminaire sur les définitions et classifications pour un questionnaire sur les forêts.

STATISTICAL ACTIVITIES OF THE INTERNATIONAL CIVIL AVIATION ORGANIZATION

by A. M. Lester

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The International Civil Aviation Organization was set up in provisional form in 1944 and in permanent form in April 1947. Its aims and objectives, as set forth in Article 44 of its Convention, are to "develop the principles and techniques of international air navigation and to foster the planning and development of international air transport so as to:

"(a) Insure the safe and orderly growth of international civil aviation throughout the world;

"(b) Encourage the arts of aircraft design and operation for peaceful purposes;

"(c) Encourage the development of airways, airports, and air navigation facilities for international civil aviation;

"(d) Meet the needs of the peoples of the world for safe, regular, efficient and economical air transport;

"(e) Prevent economic waste caused by unreasonable competition;

"(f) Insure that the rights of contracting States are fully respected and that every contracting State has a fair opportunity to operate international airlines;

"(g) Avoid discrimination between contracting States;

"(h) Promote safety of flight in international air navigation;

"(i) Promote generally the development of all aspects of international civil aeronautics."

The pursuance of these objectives requires a great deal of classified and organized information concerning the operation, activities, and economics of world aviation. In other words, it requires many statistics.

Like the United Nations and most of the other Specialized Agencies, the International Civil Aviation Organization is occupied at present in building up its statistical machinery. ICAO, too, had a predecessor before the war, an organization called the Commission internationale de Navigation aérienne, but the statistical machinery that CINA had laboriously built up was largely destroyed by the eight-year gap caused by the war.

The data consisted largely of routine reports on aviation statistics, chiefly on air traffic, from each Member State. These reports were not fully standardized but were collated into a routine publication by the Commission's staff. They could fairly easily have been started again if it had not been for the fact that the machinery that produced these reports in many states had itself ceased to exist and required rebuilding before any further aviation statistics could be produced.

This meant that a large number of countries were virtually starting again in the field of aviation statistics with new personnel and new methods, and since there were many other new factors in the postwar aviation picture, including an expansion in commercial aviation of the order of 900 per cent, it was decided that the time was propitious for making an attempt to improve and standardize aviation statistics throughout the world. It was recognized that this process might take somewhat longer to complete than the alternative of merely restarting the CINA machinery, but the opportunity to review all definitions and methods and get them standardized for the future was too good to be missed.

The International Civil Aviation Organization therefore settled down in 1946 to the long uphill task of finding definitions and methods that would be accepted by all signatory States for dealing with the many complicated items that go to make up aviation statistics.

In general, the best way to do this job of international standardization of statistics is probably to start by collecting the appropriate national publications, and, after careful expert study of these products, to call a general meeting of national representatives with the idea of exploring the significance of the differences and agreeing on the highest common factor of standardization.

In view of the status of aviation statistics just after the war, however, this procedure was impossible, since only two or three countries were publishing such statistics currently and prewar methods had suffered too much change to be useful in this way. Moreover, many of the countries of Europe and the East had no official aviation statistics or statisticians and would not have been able to express any significant views on the subject.

The alternative procedure was therefore adopted of circulating straight away a set of standardized reporting forms complete with proposed standardized nomenclature and definitions in English, French and Spanish. These forms were of course built on prewar practice in aviation statistics, modified by whatever advice was available on current practice.

Inevitably this advice came chiefly from the United States and Canadian sources, and the resultant forms had a strong North American flavor, but ICAO has the advantage of having an international trade association to advise it on such matters in the International Air Transport Association, and this association was of the greatest assistance at this stage. It was felt, moreover, that in those countries that were virtually starting again in aviation statistics, a clear set of terms and definitions would be of considerable assistance, whatever flavor they might have, while in those countries with statistical procedures already fairly well established, the effort to fill in a standardized form would be the best method of showing up international differences for subsequent adjustment.

The first set of forms was issued early in 1946. They covered monthly traffic statistics, annual economic and financial statistics, and periodic analysis of flow and of origin and destination along main world routes. The forms were completely revised early in 1947. It was still not possible even in 1947 to call a truly representative meeting of the national aviation statisticians of the world, but such a meeting is scheduled for January 1948, when it is hoped that a second revision will bring the forms nearer to something that can be accepted as a basis for international aviation statistics for the future.

The present forms appear to be fairly satisfactory so far as can be seen from present returns. Only about a dozen countries have filed any forms out of the forty-odd contracting States of ICAO and the seventy-odd states of the world, but these dozen countries account for well over 90 per cent of world aviation statistics. Moreover, those countries that have not sent in returns have in most cases been prevented by other reasons than difficulties with definitions or methods. Some countries have not yet got their national aviation statistics going after the war; others have only recently acquired aviation enterprises; still others have no satisfactory machinery for dealing expeditiously with requests for statistics from international organizations.

It is hoped that our general meeting, in January 1948, of aviation statisticians from many countries will help to solve some of these domestic problems as well as lay the foundation for standardized world aviation statistics.

As is frequently pointed out, however, international meetings of this sort tend to benefit chiefly those who need them least and are too little attended by representatives from the smaller countries who would most benefit from expert discussion and advice. Like all international organizations that are attempting to lay down a world framework for international collaboration, ICAO has the greatest difficulty in obtaining the views of these smaller nations so as to keep their interests in proper perspective.

The only solution to this problem lies in personal contacts between secretariat experts and contracting States. We cannot expect countries with relatively small stakes in the air transport field to devote large research staffs to the study of aviation economics, and if we want statistics from these countries we must go out and get them ourselves. As part of the program, our statistics section is proposing over the next few years to do a number of intensive studies of aviation statistics in those countries where past and present aviation statistics are least satisfactory.

The development of ICAO statistical machinery may be summed up, therefore, in three stages:

(1) The circulation of a set of standardized statistical reporting forms based chiefly on secretariat study of prewar and present practice, but with the best available advice from member governments, the trade associations and airline experts;

(2) Discussion and improvement of these forms by general meetings of aviation statisticians at suitable intervals;

(3) Personal visits by secretariat experts to obtain views and statistics from those countries not able to send representatives to meetings.

STATISTICAL ORGANIZATION IN ICAO

ICAO is directed by a permanent Council formed of civil aviation experts from contracting States. The Council is formed into two committees which also are in permanent session: the Air Navigation Committee, concerned chiefly with technical matters; and the Air Transport Committee, concerned chiefly with economic and legal matters. These Committees have a number of subcommittees to advise them on special problems, and one of the subcommittees of the Air Transport Committee looks after statistics.

The Council and the Air Transport Committee will also be advised by a general committee of aviation statistical experts from Member States that will be convened to periodic sessions, generally in Montreal. In ICAO we call this type of periodically convened committee of advisory experts a "Division", meaning a specialized Division of the Committee. The first of these sessions will take place in January 1948, as I have described.

The secretariat of ICAO has a Statistics Unit with a proposed establishment of three analysts of international civil servant grade and nine statistical assistants and secretaries of clerical grade. Considerable difficulty is being experienced in finding suitable people to fill these posts. The general shortage of statistical and economic staff appears to be world-wide, and we try not to take people who are filling useful posts in governments or airlines.

The Statistics Unit is at present engaged in doing the foundation work for future analyses. Files are gradually being built up containing prewar and postwar facts and figures relating to the various branches of aviation. Inclusive lists of the world's airlines, large and small, are being prepared and documented to form the basis of a card index. A thorough study of costs and revenues and capital values is being initiated for the more important ancillary activities such as airports, navigational facilities, and meteorological stations. The completed statistical reporting forms from airlines are checked, studied, and analysed as they are sent in by contracting States.

ICAO was set up to deal with the problems of international civil aviation, and it is the first purpose of the statistical organization of ICAO to provide statistics related to these problems. The statistics that appear in our reporting forms and files are therefore chiefly connected with international aviation, which is itself largely composed of the operations of regularly scheduled international airlines.

Discussions are now proceeding between ICAO and the United Nations to see whether ICAO cannot, within its terms of reference, take over the collection and analysis of all air transport statistics, including those relating to domestic airlines as well as to international airlines. ICAO would then be able to provide the United Nations with total national air transport statistics for the *Monthly Bulletin of Statistics.*

The details of the statistics we are at present collecting in the air transport field are best seen in the reporting forms. They consist chiefly of monthly figures of traffic in terms of passenger and ton-kilometers, supplemented by annual figures of capitalization and operating costs and revenues. Twice a year we ask for detailed studies of passenger traffic on main routes, giving the flow of each stage and the origin and destination of all passenger journeys.

From the point of view of professional statistical practice these statistics are elementary, although of course they contain the usual hidden problems of definition and inclusion. Those who have had to deal with transport statistics would be glad to recognize such old favorites as the definition of an international service, the exclusion of non-paying passengers, and the distinction between regular and irregular services. The problem of estimating the travel demand of the season-ticket holder is one that the air transport statistician has not yet had to face. No doubt it will not be long before this problem also appears in our files.

FUTURE PROGRAM

Our first job on our future program is to perfect the statistical machinery we have already set up and make it work. This we propose to tackle with the help of the aviation statistical experts from all over the world that we hope will come to our Statistics Division meeting next January, and with personal missionary visits, as I have already described.

Included in this job of perfecting our statistical machinery are our collaboration with the United Nations on collecting total aviation statistics, our internal analysis methods, and the evolution of a routine bulletin of aviation statistics for publication.

One of the objects of the Statistics Division will be to lay down a long period program of statistical development for ICAO to follow for the more distant future. Already it is clear that we shall need routine or periodic statistics on the operation, utilization, and economics of international airports, navigational facilities, and other parts of the ground organization of international airways.

Other fields in which ICAO may be called upon to make a statistical contribution include the statistical analysis of aircraft accidents, the economics of air mail, and the effect of air transport on the international balance of trade.

STATISTICAL TECHNIQUE

Most of the statistics dealt with in the international aviation sphere consist of elementary arithmetic, figures expressible in ordinary tables and graphs. In our present state of evolution these are the only statistics we are organized either to collect or to study.

We look forward, however, to the time when we shall have the raw material and the time to study the more advanced aspects of the development of air transport statistics, such as the different elements of variation in load factors; correlations between population, standard of living, and the demand for air transport; analysis of the traffic of a transport network; the economics of non-stop air services.

In such fields as these there will in the future be plenty of room for statistical research and development. For the present we have our hands full coping with more elementary problems, such as how to obtain replies from governments that do not answer letters, how to estimate passenger-miles when countries report only passengers carried and how to define a regular air service. We make progress all the time, but there are many problems. We only claim that we are learning to walk; it may be some time before we can pass on to the more advanced lesson of learning to run.

Résumé

Les buts de l'Organisation de l'aviation civile internationale, tels qu'ils sont exposés dans la Convention de l'OAOI, sont "de développer les principes et la technique de la navigation aérienne internationale et de favoriser l'établissement et de stimuler le développement des transports aériens internationaux". La poursuite de ces buts exige de nombreuses statistiques.

L'on a prévu que le développement des organismes statistiques de l'OACI s'effectuerait en trois étapes: 1) il sera distribué aux Etats contractants une série de formulaires de rapports statistiques uniformisés ; 2) ces formulaires seront examinés et améliorés par des experts statisticiens en matière d'aviation qui se réuniront à intervalles choisis; 3) il sera envoyé des experts du Secrétariat dans les pays qui n'auront pu envoyer de représentants à ces réunions.

Les organismes statistiques de l'OACI comprennent: 1) un Sous-Comité de statistique du Comité du transport aérien du Conseil permanent; 2) un Comité consultatif d'experts statisticiens en matière d'aviation, qui se réunit périodiquement; 3) un bureau de statistique au sein du Secrétariat.

Parmi les mesures envisagées pour développer cette organisation statistique, il convient de noter: le rassemblement de statistiques aériennes générales, en collaboration avec l'Organisation des Nations Unies ; la publication d'un bulletin de statistique en matière d'aviation; la réunion de statistiques portant sur les aéroports internationaux, les services de navigation et autres détails de l'infra-stucture des lignes aériennes; et peut-être une analyse statistique des accidents d'aviation, le régime économique de la poste aérienne, et l'effet des transports aériens sur la balance commerciale des divers pays.

STATISTICAL ACTIVITIES OF THE WORLD HEALTH ORGANIZATION

by Knud Stowman

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When today we are advancing toward internationally organized responsibilities in the fields of various professions this is not due to ourselves alone but to the farsighted persistency of preceding generations. It was a whole century of effort which was crowned by success on July 22, 1946, when sixty-one countries represented at the International Health Conference in New York signed the Constitution of the World Health Organization.

As early as in 1843, the Government of the United Kingdom suggested a sanitary conference, but it was not until 1851 that it actually met in Paris on the invitation of the French Government. Six months of deliberation resulted in the first sanitary convention relating to quarantine measures. This convention was ratified only by France, Portugal, and Sardinia, and after a year or two Portugal and Sardinia withdrew.

Many conferences followed, but the first workable International Sanitary Convention came into existence only in 1892. The Pan American Sanitary Bureau was established in 1904 and the *Office international d'Hygiène publique* in 1907. The League of Nations Health Organization came into being in 1921 with a much wider program, but still there was no unity in the administration of the international aspects of public health.

The objective of the World Health Organization, as defined in its Constitution, is the attainment by all people of the highest possible level of health (Article 1). In order to realize this objective various functions of the Organization are enumerated in the Constitution. Among the functions having a relation to statistics may be mentioned that the WHO is:

"to act as the directing and coordinating authority on international health work" [Article 2(a)];

"to establish and maintain effective collaboration with the United Nations Specialized Agencies, governmental health administrations, professional groups and such other organizations as may be deemed appropriate" [Article 2(b)];

"to establish and maintain such administrative services as may be required including epidemiological and statistical services" [Article 2(f)];

"to establish and revise as necessary international nomenclature of diseases, of causes of death, and of public health practices." [Article 2(s)]

At the same time, an Interim Commission, with its secretariat and technical services, was established to carry on the necessary work until such time when the Constitution should have been ratified by twenty-six Member States of the United Nations. The Interim Commission consists of persons designated by eighteen Member States of the United Nations. The fourth session of this Commission opened in Geneva on August 31, 1947.

Among the responsibilities of the Interim Commission is the continuation of the functions of former international organizations in the field of public health. This means, among other functions, continuation of the statistical work of: (1) the Epidemiological Intelligence and Public Health Statistics Service of the League of Nations Health Organization (Geneva); (2) the *Office international d'Hygiène publique* (Paris); (3) the Epidemiological Information Services of UNRRA (Washington and London); (4) the Far Eastern Epidemiological Intelligence Bureau (Singapore), originally organized by the League of Nations and after the war reopened by the British Government. The functions of the Paris office have been taken over by the WHO pending complete absorption; the other services have been completely absorbed. Each of these organizations had its publications containing public health statistics. All have contributed materially to the advancement of epidemic control and public health in its various aspects.

The Department of Epidemiology and Public Health Statistics of the WHO Interim Commission is a direct successor of the League of Nations Epidemiological Intelligence Service from which it inherited personnel, files, and publications. The most important part of its work is carried out under the provisions of the International Sanitary Conventions of 1926 and 1944, and the International Sanitary Conventions for Aerial Navigation of 1933 and 1944, the administration of which is its responsibility. Administrative action is therefore joined to the collection and utilization of epidemiological statistics, and the files cover all information of this nature from 1921 to date.

At present, the following publications containing public health statistics are issued as a continuation of parallel League of Nations series:

(1) *Weekly Epidemiological Record* (deals mainly with the occurrence of the international quarantine diseases).

(2) *Monthly Epidemiological and Vital Statistics Reports* (deals with the incidence of all notifiable diseases, and gives also birth, death, and infant mortality rates and tuberculosis mortality in countries and cities).

(3) *Annual Epidemiological Reports* (the 1939-46 volume, now in preparation, continues the League of Nations series that came to an

end with the 1938 issue. It will give revised morbidity data, causes of death, and other vital statistics which may be of interest to public health administrations).

It may be added that the mailing lists of these publications are made up mainly of public health and medical authorities and differ from the distribution lists of the United Nations Statistical Office. The overlapping of vital statistics in the respective publications is therefore only apparent. It is expected that the secretariats of the two services will study jointly the possibility of diminishing overlapping in the collection and tabulation of vital statistics.

Among the expert committees of the WHO Interim Commission whose work is related to statistics should be mentioned, in the first place, the Expert Committee for the Preparation of the Sixth Decennial Revision of the International Lists of Diseases and Causes of Death.

This Committee held its first meeting in Ottawa, Canada, March 10-21, 1947. Detailed recommendations were made for consideration by the International Conference which is to meet in Paris in March 1948. A second meeting will take place in Geneva in October 1948 to study amendments proposed by governments to the draft list adopted in Ottawa. The United Nations Statistical Office is represented on this Committee by an observer, and is cooperating in obtaining comments from national statistical offices.

According to its instructions from the World Health Conference the Interim Commission is also directed to undertake preparatory work in connection with the establishment of International Lists of Causes of Morbidity.

Continuation of certain League of Nations series, such as the Public Health Yearbooks and the Statistical Handbooks (relating to organization of statistics in various countries) had to be postponed to better times when the most urgent work is well in hand. This has been the case, too, with various special studies brought out in the past by the League of Nations Health Organization and its secretariat and which may be revived later.

In general, the opinion is advanced that the split authority which characterized international epidemiology during the war rather stimulated than hurt the progress of work in this field. Should this division have continued, the results would no doubt have been less beneficial. The World Health Organization is unifying these efforts at a time when epidemic control is in a higher state of perfection than ever before, and valid results may be expected in due time.

It may also be permitted to point out that collaboration between intergovernmental agencies has become smoother than it ever was in the past. Thus, on August 13, 1947, the Economic and Social Council of the United Nations approved the draft agreement between the United Nations and the WHO which will be recognized as a Specialized Agency when this agreement shall have been sanctioned by the General Assembly of the United Nations and by the World Health Assembly. This development is indeed an excellent augury for future international teamwork in the fields of vital and public health statistics.

Today everyone recognizes that the technical organizations were the most successful part of the League of Nations. That is because professional personnel are in themselves international by virtue of their training, interests, and standards of behavior. If the United Nations is to succeed, a great responsibility rests, therefore, with professional men, that is, with everyone here present. We are advancing toward a good plan of collaboration in statistics, better than we ever had before. So let us implement it and use it for good work in humility toward those who preceded us, conscious of our personal responsibility toward those who shall come after us, and with goodwill toward one another.

Résumé

Parmi les fonctions qu'assume l'Organisation mondiale de la santé en matière de statistique, l'on peut citer la création et l'entretien des services d'épidémiologie et de statistique, ainsi que l'établissement et la révision d'une nomenclature internationale des maladies, des causes de décès et des méthodes d'hygiène publique.

La Commission intérimaire de l'Organisation mondiale de la santé a entre autres fonctions, celle d'assurer la continuité des travaux statistiques des organismes suivants: 1) Service des renseignements épidémiologiques et de la statistique sanitaire de la section d'hygiéne de la Société des Nations; 2) Office international d'hygiène publique; 3) Service de renseignements épidémiologiques de l'UNRRA; 4) Bureau d'Extrême-Orient de renseignements épidémiologiques, qui se trouve à Singapour.

Les publications énumérées ci-dessous font suite aux séries correspondantes éditées par la Société des Nations: 1) Relevé épidémiologique hebdomadaire; 2) Rapport épidémiologique et démographique mensuel; 3) Rapport épidémiologique annuel. La reprise de la publication des certaines collections de la Société des Nations, tels que les Annuaires sanitaires internationaux et les Manuels statistiques, a dû être ajournée à une époque ultérieure.

Une commisson d'experts pour la préparation de la sixième revision décennale des Nomenclatures internationales des maladies et causes de décès a tenu sa première session à Ottawa au mois de mars 1947. Elle y a élaboré des recommandations détaillées qu'examinera la Conférence internationale qui doit se réunir à Paris en mars 1948.

STATISTICAL ACTIVITIES AND REQUIREMENTS OF THE INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

by J. S. Gould

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The nature and extent of the Bank's requirements for economic and financial information, statistical and otherwise, is determined directly and indirectly by the course of its operations, the purposes of which are set forth in Article I of the Articles of Agreement of the Bank, as follows:

"(i) To assist in the reconstruction and development of territories of members by facilitating the investment of capital for productive purposes, including the restoration of economies destroyed or disrupted by war, the reconversion of productive facilities to peacetime needs and the encouragement of the development of productive facilities and resources in less developed countries.

"(ii) To promote private foreign investment by means of guarantees or participations in loans and other investments made by private investors; and when private capital is not available on reasonable terms, to supplement private investment by providing, on suitable conditions, finance for productive purposes out of its own capital, funds raised by it and its other resources.

"(iii) To promote the long-range balanced growth of international trade and the maintenance of equilibrium in balances of payments by encouraging international investment for the development of the productive resources of members, thereby assisting in raising productivity, the standard of living and conditions of labor in their territories.

"(iv) To arrange the loans made or guaranteed by it in relation to international loans through other channels so that the more useful and urgent projects, large and small alike, will be dealt with first.

"(v) To conduct its operations with due regard to the effect of international investments on business conditions in the territories of members and, in the immediate postwar years, to assist in bringing about a smooth transition from a wartime to a peacetime economy."

In carrying out these purposes the Bank acts not only as a lender but also as a borrower of investment funds. Most of the funds required by the Bank in addition to its capital will have to come from the sale of its securities in the private investment market, particularly the United

States market at present. Therefore, the Bank must be informed in this regard on the economic, financial, and investment market conditions prevailing in prospective capital exporting countries. In its lending activities the Bank considers loan applications in accordance with standards prescribed in the articles of agreement. Programs for reconstruction and development specified in loan applications must be investigated with reasonable dispatch. The Bank must have readily available adequate data to determine whether or not loan applications and supporting evidence conform to the prescribed standards.

Applicants for loans are asked to furnish the Bank with all information necessary for the consideration and appraisal of the application. A schedule of information required is supplied to applicants; it embodies basic data relating to the general economic condition of the country, adapted in each case according to any special features or characteristics of the country and in the light of the particular plan or projects for which the loan is sought.

In order to ascertain the feasibility of proposed programs in the light of availability of supplies, to determine the competitive position of applicants, and to check on information supplied by applicants, the Bank has need for a wide range of readily accessible economic and financial data concerning the current and prospective status of the economies not only of member countries but also of all others. Information is needed on the balance of payments and its various components; national income; industrial and agricultural production; mineral resources, their production and consumption; electric power, both hydro and thermal; prices, both security and commodity; transportation, both inland and ocean; population and manpower; and trade and finance. In other words, data are needed on all important aspects of the economic and financial status of the changing conditions of borrowing as well as lending countries.

Obviously the scope of this paper does not lend itself to a detailed and exhaustive statement of the types of data required in the course of the Bank's operation. The following limited examples may suffice.

In the field of transportation, it would be helpful if the appropriate international agencies gathered and made available data on:

(a) Periodic schedules of conference tariffs, voyage charter rates, and time charter rates on commodities moving along major ocean routes;

(b) Periodic evaluations, for each major maritime nation, of the shipbuilding and ship-procurement program currently in progress and due to be affected in some specified period ahead;

(c) Periodic data by country on the amount of foreign exchange earnings from rail transit traffic, rental of freight cars, repair of rolling stock, etc.;

(d) Periodic data by country on the quantity and character of inland waterway traffic and on the proportion of all traffic moving by inland waterways, railways, highways, and airlines.

In the field of population and manpower the data required fall within the following major groupings:

(a) Population
(b) Labor force
(c) Employment and unemployment
(d) Productivity
(e) Hours of work
(f) Wages
(g) Cost of living

In each of these categories it is important that the data be collected and presented in such a manner as to make international comparisons possible. To achieve this it is necessary to devise not only standard units of measurement but also uniform breakdowns sufficiently detailed to reveal significant differences wherever possible. All too frequently a single figure for a broad statistical area suffers from the weakness of concealing the internal relationships among the component parts. For example, there is a lack of international comparability in the breakdown of employment by industry groups. At present it is often impossible to compare the employment in a particular group of industries in one country with the same industry group in another country because of the manner in which the data are currently gathered and presented.

In the field of labor productivity there is need for data in terms of sufficiently detailed and homogeneous branches of industry to make international comparisons meaningful. For instance, in the case of the iron and steel industry, productivity statistics should be collected and presented not only for the industry as a whole by country, but also for such detailed sub-divisions as pig iron, steel ingots, steel castings, rolled steel, etc.

In the analyses of industrial projects there is need for data on:

(a) Plant capacities for the production of major industrial items;
(b) Actual production rates covering these items;
(c) Employment related to these items and rates; and
(d) Current progress on reconstruction and expansion activites in various industries with special reference to existing and contemplated capacities.

The Statistical Office of the United Nations is currently reporting production rates for some items. This information is presented in a manner valuable for our use. However, it is as yet incomplete in coverage, at least so far as the number of reporting countries is concerned and the number of items involved.

At present, the Bank is interested in the problem of foreign investments, direct and portfolio. It would be helpful in a study of this question if data were readily available on:

(a) Individual issues of outstanding external public and private bonds in currencies of issuing country, par value of amounts issued and outstanding, status of service payments, and debt readjustments in the case of issues in default.

(b) Value of direct investments classified by types of enterprise, by amounts and rates of return, and by country in which invested.

(c) Annual payments on internal and external indebtedness of countries classified according to currencies of payment.

(d) Annual payments abroad by countries for dividends, profits, rents, and other returns on externally owned domestic enterprises and properties, classified by enterprise, source of payment and country to which payment is made.

(e) Intergovernmental lines of credit established, classified according to creditor and debtor country and amounts of withdrawals by periods.

Some of the information is of course available in part in the balance of payments figures collected by the International Monetary Fund. However, data on international portfolio and direct investments including current capital transfers are lacking or, with one or two exceptions, are merely fragmentary.

In general, it may be said that the Bank is not a primary collector of statistical data nor a processor of such data for purposes of publishing statistical series or periodic issues of statistical bulletins. As a user of data it relies heavily on the considerable body of financial, monetary, and other economic statistics already available or which is being developed by the several agencies of national governments as well as the United Nations, the International Monetary Fund, the FAO, ILO, and other intergovernmental agencies. However, the intelligent use of the extensive array of the statistical data, particularly international trade statistics, compiled by these agencies involves problems of comparability, adequate coverage, uniformity of presentation, and precision of description or definition. Further progress needs to be made toward solving these problems.

In the meantime, in view of the wartime disruption of statistical reporting in some countries and improved reporting in other countries, it would be very useful if the United Nations and the Specialized Agencies could arrange for a survey of the primary sources of statistical information available in individual countries. The result of such a survey might be a publication setting out the various sources (publication or agency) for each important statistical series.

Résumé

La nature et l'étendue des besoins de la Banque internationale pour la reconstruction et le développement, en renseignements économiques et financières, d'ordre statistique ou autre, sont déterminées par le cours normal de ses opérations dont les buts sont énoncés dans le Statut de la Banque.

En qualité d'emprunteur de fonds d'investissement, la Banque doit être renseignée sur les conditions économiques, financières et celles du marché des investissements dans les pays éventuellement exportateurs de capitaux. Comme prêteur, elle doit pouvoir aisément disposer de données adéquates pour apprécier les demandes de prêts et les preuves fournies à leur appui. Pour vérifier les possibilités de réalisation des programmes présentés, pour déterminer la situation comparative des demade nursse présentant concurremment et pour contrôler les renseignements qu'ils fournissent, la Banque a besoin de toute une série de données économiques et financières, non seulement sur les pays membres mais sur tous les autres.

A titre d'exemple, la Banque a besoin, dans la poursuits de ses travaux, de renseignements sur les transports, sur la population, sur la main-d'oeuvre et sa productivité, ainsi que sur la production industrielle. L'on en trouve une autre illustration dans l'intérêt que la Banque porte actuellement à la question des investissements étrangers, soit directs, soit sous forme de valeurs en portefeuille.

D'une manière générale, la Banque n'est pas chargée de rassembler des données statistiques, ni de les élaborer en vue de leur publication mais elle utilise ces données et, à ce titre, elle s'en rapporte aux statistiques existantes ou à celles qu'établissent actuellement les divers gouvernements, l'Organisation des Nations Unies ainsi que d'autres institutions intergouvernementales.

STATISTICAL ACTIVITIES OF THE INTERNATIONAL MONETARY FUND

by J. J. Polak

Chief, Statistics Division, Research Department
International Monetary Fund

The statistical activities of the International Monetary Fund derive, directly or indirectly, from the operating responsibilities assumed by the Member Governments of the Fund or imposed upon the Fund itself by the Articles of Agreement of the Fund, signed at Bretton Woods in July 1944. The determination of initial par values of the currencies of member countries, the conditions of access of members to the Fund's resources, the provisions regarding exchange control and practices, the clauses regarding "scarce currencies," and other operating functions of the Fund impose on it extensive responsibilities to determine whether certain conditions prevail in a particular country. The Fund must have the information, statistical and otherwise, to be able to discharge these responsibilities with respect to every one of its member countries, large or small. The Fund also requires statistical information concerning conditions in non-member countries, both because they impinge directly on the conditions in member countries and because the relations between member countries and non-member countries are a matter specifically provided for in the Articles of Agreement.

The judgment which the Fund will have to pass on conditions in member countries in connection with its operations will often have to be given with great speed. The Fund Agreement requires the Fund to declare its attitude within seventy-two hours with regard to proposals by a member country to change its rate of exchange by more than ten and less than twenty per cent. (With respect to changes of less than ten per cent, the Fund is not entitled to object; and with respect to changes of more than twenty per cent, the Fund is entitled to a longer period to declare its attitude.) Similarly, the Fund is required to respond normally within a three-day period to requests from member countries to purchase foreign currencies.

Thus both scope and speed require the Fund to have at its permanent disposal a large body of statistics. In the first instance, these statistics comprise the foreign exchange market and the transactions that take place in it, *i.e.*, rates of exchange, statistics on the balance of payments and its various elements, foreign exchange assets and liabilities, gold movements. But an interpretation of these phenomena requires the

Fund to go back to their cause: to prices, both absolute and compared to those of other countries, prices of imports, domestic output and exports; to data regarding the money supply and the elements which cause its expansion or contraction; to national income statistics and statistics of industrial and agricultural production; in short, to the entire body of economic and financial information concerning the conditions of any one of its member countries.

When the Fund was organized it was realized that research would constitute one of its very important functions and that research required statistics. Accordingly, special provisions were inserted in the Fund Agreement enumerating a long list of items on which member countries committed themselves to provide the Fund with information. This list itself, moreover, was stated to be a minimum list and special provision was made for the Fund to arrange to obtain more information and generally to "act as a center for the collection and exchange of information on monetary and financial problems."[1]

During the first year of its activities the Fund has concentrated its efforts in the collection of statistics rather more on financial and monetary than on other economic statistics. It has done so for various reasons. In the first place, certain of these financial and monetary statistics describe matters of crucial, primary interest to the Fund, such as gold and foreign exchange holdings and balances of payments. Secondly, a considerable body of other economic statistics is already available or is being developed by other intergovernmental agencies. Thus index numbers on industrial production and wholesale prices are currently being collected by the United Nations and cost of living data by the ILO. Considerable attention to national income statistics (which are included in the Fund's minimum list) is being given by the United Nations, and the FAO is concentrating on the improvement of agricultural statistics. Thirdly, the Fund, having its most direct connections in member countries with central banks and treasuries is in an especially privileged position to collect statistics originating in the monetary sphere. Fourthly, it was felt that with respect to countries where other statistics, such as data on industrial production, national income, investment, were relatively little developed and might not easily be developed in the short run, a revealing source of information was available in banking statistics which exist for practically all countries. And, finally, the Fund based itself on the fact that two of its crucial statistical objectives, namely, gold and foreign exchange and balance of payments data, are so intimately connected with other financial and monetary statistics that they can most efficiently be collected jointly with such other statistics, and that indeed the other statistics provide an important clue to the accuracy of the data in these two fields, as well as to their interpretation.

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[1] The full text of Article VIII, Section 5, of the Fund Agreement which deals with the obligations of member countries in this respect is given below :

"ARTICLE VIII, Section 5. *Furnishing of information.*

"(a) The Fund may require members to furnish it with such information as it deems necessary for its operations, including, as the minimum necessary for the effective discharge of the Fund's duties, national data on the following matters :

"(i) Official holdings at home and abroad, of (1) gold, (2) foreign exchange.
"(ii) Holdings at home and abroad by banking and financial agencies, other than official agencies, of (1) gold, (2) foreign exchange.
"(iii) Production of gold.
"(iv) Gold exports and imports according to countries of destination and origin.
"(v) Total exports and imports of merchandise, in terms of local currency values, according to countries of destination and origin.
"(vi) International balance of payments, including (1) trade in goods and services, (2) gold transactions, (3) known capital transactions, and (4) other items.
"(vii) International investment position, *i.e.*, investments within the territories of the member owned abroad and investments abroad owned by persons in its territories so far as it is possible to furnish this information.

It may be well to dwell somewhat longer on this last point and to elucidate at the same time a considerable part of the statistics which the Fund is currently collecting. One of the main concerns of the Fund in collecting balance of payments statistics is to follow, on the one hand, the deficit or surplus in the balance of payments and, on the other hand

"(viii) National income.

"(ix) Price indices, *i.e.*, indices of commodity prices in wholesale and retail markets and of export and import prices.

"(x) Buying and selling rates for foreign currencies.

"(xi) Exchange controls, *i.e.*, a comprehensive statement of exchange controls in effect at the time of assuming membership in the Fund and details of subsequent changes as they occur.

"(xii) Where official clearing arrangements exist, details of amounts awaiting clearance in respect of commercial and financial transactions, and the length of time during which such arrears have been outstanding.

"(b) In requesting information the Fund shall take into consideration the varying ability of members to furnish the data requested. Members shall be under no obligation to furnish information in such details that the affairs of individuals or corporations are disclosed. Members undertake, however, to furnish the desired information in as detailed and accurate a manner as is practicable, and, so far as possible, to avoid mere estimates.

"(c) The Fund may arrange to obtain further information by agreement with members. It shall act as a center for the collection and exchange of information on monetary and financial problems, thus facilitating the preparation of studies designed to assist members in developing policies which further the purposes of the Fund."

(of equal magnitude with opposite sign), the official operations to finance the deficit or surplus. Normally, changes in gold and foreign exchange assets and liabilities constitute the largest, as well as the most readily measurable, part of this "balancing" item. Thus changes in gold and foreign exchange assets and liabilities can be taken as an indicator of a country's balance of payments position—and an indicator which is both more accurate and usually more rapidly available than the statistics on the individual items of the balance of payments. If statistics on changes in the gold and foreign exchange holdings are combined with trade statistics, which represent in all countries the major current item and on which usually reasonably good statistics are available at frequent intervals, it is possible to obtain an approximate picture of a country's balance of payments on a monthly or quarterly basis within a few weeks after the end of the month or the quarter. Such an approximation is certainly not a satisfactory substitute for more complete balance of payments statistics to be made available at frequent intervals; but as a stop-gap measure pending the development of full balance of payments statistics, this approximation has proved extremely useful.

In most countries the bulk of the gold and foreign exchange assets are held by institutions whose offsetting liabilities consist mainly of "money," either currency money in the case of the central bank, or deposit money in the case of the commercial banks. The assets of these institutions consist, in addition to the foreign assets already mentioned, of domestic assets of various categories. These domestic assets may be classified according to various principles. Normally, in banking analysis the classification has been made on the basis of the relative liquidity of the various assets. For the purposes of economic analysis, however, it would appear more useful to classify the assets according to their origin. The classification which is presently followed by the Fund is that of: (a) credits to the central government, both in the form of treasury bills directly placed with the banking institution, advances granted to the government or long-term government bonds bought by the bank in the market; (b) credits to other governmental entities, such as governmental development corporations and municipalities; and (c) credits to business, which may be broken down further on the basis of the nature of the business, *e.g.*, agriculture, industry, trade. Subject to certain discrepancies of relatively minor importance, it follows immediately from the balance sheet identity between assets and liabilities that the sum of the foreign plus the domestic assets of the banking system must approximately equal the total money supply in the country. Thus the analysis of balance sheets of central banks and commercial banks enables one not only to observe the fluctuations in the money supply in a country but also to locate the particular inflationary or deflationary factors at work which are the counterpart, and in most instances one may say the cause, of these fluctuations in the money supply. The analysis can be a simple one, separating only factors of foreign origin from factors of domestic origin, or a more detailed one on the basis of balance of payments data and data on the changes in the various types of domestic assets held.

To link gold and foreign exchange assets on the one hand with balance of payments statistics, and on the other hand with statistics of domestic inflation or deflation, poses the particular problem of conversion. For the former purpose these assets require to be expressed in some internationally comparable unit, *e.g.*, in dollars; for the latter, they require to be expressed in the national currency of the country concerned. The conversion of these assets for balance sheet purposes has in many countries been performed according to a great variety of principles, which are often difficult to reconstruct. The Fund is making a particular point of reconciling statistics on gold and foreign exchange assets and liabilities expressed in dollars with the actual figures in national currencies as they appear in the balance sheets of the institutions holding them.

The use of extensive statistical material for a large number of countries inevitably poses numerous basic problems of comparability, definition, and standardization. The Fundis endeavoring to bring clarity and unity regarding the statistics within its sphere, realizing, though, that too much zeal for uniformity may lead to meaningless results where the underlying phenomena are fundamentally not comparable and that any definition, however cautiously devised, must contain a certain, and sometimes a substantial, element of arbitrariness. This arbitrariness applies even to so apparently clear a concept as the rate of exchange. In countries where the sale of exchange by the authorities is subject to a tax, this tax cannot but be considered as part of the price which the domestic purchaser has to pay to obtain foreign exchange, and the selling rate by the authorities of this country should for statistical purposes be defined so as to include the tax. If, however, a country imposes a general *ad valorem* import duty but does not levy a tax on the sale of exchange, very much the same economic effects are obtained; yet it would not appear reasonable to include this duty in a definition of the rate of exchange nor—and here questions of policy come to affect inevitably questions of definition—to state that a country which has varying import duties on various commodities engages in multiple currency practices (which are prohibited under the Fund Agreement).

The Fund has pushed its endeavors in the direction of standardization furthest with respect to balances of payments. Over the past few months, numerous discussions have taken place with various experts and a general conference is planned on the subject starting September 22. It is expected that as a result of this conference a general balance of payments form will be sent out by the Fund late this year and both comparable and reasonably complete data on the balance of payments of most countries will start to be available early in 1948.

In another major field of the Fund's interest, namely, that of foreign exchange assets and liabilities, the question of definition poses the most important difficulties, which must be resolved in order to make the analysis of the series of figures of even any one country meaningful. One set of difficulties arises from the problem of drawing a line of demarcation between the "stock" concept of foreign exchange holdings and the "flow" concepts which feed into it and flow from it. Unused parts of lines of credit, credit margins under payments agreements, liabilities to foreigners falling due in the near future, foreign exchange set aside for or actually turned over to importers, import licenses granted, all constitute such marginal items. Other inconsistencies, too, mar the comparability of foreign exchange statistics, such as, in the case of a few countries, the inclusion of presumably valueless Reichsmark balances. The Fund is aiming at a definition of foreign exchange assets which would resolve at least some of the present inconsistencies; but a definition, however good, can never solve the problem completely and satisfactorily. It will be necessary to carry both in the original national data and in the Fund's publication of these data a sufficient degree of breakdown to make clear to the user to what extent the total carried under any one definition is affected by the inclusion or exclusion of border-line categories. On this point, as on so many others, there appears the advantage in the co-existence in the international field of both a central statistical bulletin which of necessity provides only the minimum of detail regarding each concept, and specialized publications which contain adequate breakdown necessary for the student who wants to do analytical work in that particular field.[3]

It may be worth while stressing some of the valuable contributions which certain intergovernmental agencies, including the Fund, can make to statistics in general. Certain of these contributions have long been recognized and need no special elaboration, such as standardization and definition and the derivation from national statistics of certain world statistics such as the volume of world trade or price index of world trade. But two other important contributions do need some elaboration.

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[3] The difficulty of finding a reasonable definition of foreign exchange assets and liabilities for purposes of economic and financial analysis is further complicated by the fact that for certain operations of the Fund the Agreement provides in Article XIX a rather precise, and by the same token somewhat arbitrary, definition of "monetary reserves." The main purpose of this particular definition is to determine whether and to what extent a member country which has used the resources of the Fund during a certain period will be required to replenish these resources at the end of that period.

(a) The extensive handling by international agencies of the national statistics of very many countries often provides opportunities, not so readily available to national compilers, to check national statistics and sometimes to discover flaws in them. Import statistics of one country provide a check on export statistics of other countries. Price indices in countries of similar economic conditions may be expected to agree, and, if they do not, provide a starting point for analysis of the cause for disagreement which, not infrequently, is found to lie in the weakness of the index number rather than in the difference in price development. Export prices of one country should move in a way comparable to import prices of other countries with whom it mainly deals. A tabulation recently made by the Fund of national statistics on imports and exports for the year 1946 indicated a remarkable excess of exports over imports of the world as a whole and gives a clue to an apparently extensive under-valuation of imports in a large number of countries.

(b) International agencies will also in many cases be important primary sources of statistics. In the Fund's proposal on balances of payments is incorporated a provision that international agencies be considered not as parts of the territory in which they are located, but as independent agencies which should prepare their own balances of payments. This distinction is a minor one with respect to those agencies whose expenditures are mainly for administrative purposes. But agencies with large capital or handling a large volume of international transactions will have balances of payments of very significant importance. They will also often provide primary material for incorporation in balances of payments of individual countries which either cannot be obtained directly or, if it were obtained directly, would lead to undesirable discrepancies. Thus, for instance, customs records on UNRRA-financed imports in the countries which received UNRRA supplies are not normally available and the best basis for the estimation of the value of these supplies should be the UNRRA records. Similarly, in the Fund's view, the best basis for the inclusion of reparations in balances of payments would be the value put on these supplies by the International Reparation Agency. The Fund and the Bank also engage in large capital transactions and their accounts will constitute important elements in the world balance of payments picture. The acquisition of about 1.3 billion dollars in gold by the Fund during the first half of 1947, for instance, is a factor to be taken into consideration in the analysis of changes in gold and dollar balances which practically cannot be performed without use of the Fund's own statistics.

The collection of statistics on a large scale imposes on the Fund the responsibility to make available for general use the essence of the material it has collected, except to the extent that such material has been obtained under confidence. So far the Fund has issued no statistical publications. An internal statistical bulletin entitled "International Financial Statistics," has recently been started which it is intended to make available for general use early in 1948. This bulletin contains data on the Fund and the Bank, exchange rates, foreign trade, gold production and gold and foreign exchange assets and liabilities, the domestic assets of the monetary system, "money" in its various forms, index numbers of the quantum and the price of imports and exports, and of agricultural and industrial production—including, it will be noted, certain material collected by the United Nations Secretariat or by other Specialized Agencies. "International Financial Statistics" will carry this information arranged country by country for all member countries, for important non-metropolitan areas of member countries, as well as for certain non-member countries.

The Fund will also start publication in 1948 of an annual volume on balance of payments somewhat similar to those previously published by the League of Nations.

Résumé

Le champ d'action du Fonds monétaire international et la rapidité avec laquelle il doit procéder exigent qu'il ait constamment à sa disposition un vaste ensemble de statistiques. Au cours de sa première année d'activité, le Fonds s'est préoccupé de rassembler plutôt des statistiques, d'ordre financier et monétaire que d'autres statistiques économiques. Les rapports qui existant entre d'une part les avoirs en or et en devises étrangères et d'autre part, les statistiques de la balance des paiemants y sont l'objet d'un examen assez approfondi. C'est ainsi qu'il est fait état du problème particulier de la conversion.

En employant une vaste documentation statistique, portant sur un grand nombre de pays, le Fonds se rend compte des problèmes fondamentaux que posent les questions de comparabilité, de définition et d'unification, et il ne se dissimule pas que toute définition, si soigneusement qu'on la formule, présentera inévitablement un certain degré d'arbitraire. Une conférence générale qui portera sur la balance des paiements devra permettre au Fonds de disposer dans les premiers mois de l'année 1948 de données à la fois comparables entre elles et relativement complètes sur la balance des paiements de la plupart des pays.

Le Fonds cherche à mettre au point une définition des avoirs en devises étrangères qui aurait pour effet de faire disparaître quelques unes des inconséquences actuelles; il estime toutefois nécessaire d'accompagner les données qu'il publiera à cet égard d'une quantité suffisante de détails.

Parmi les contributions précieuses que certaines institutions intergouvernementales, y compris le Fonds, peuvent apporter à la science statistique en général, l'on cite; 1) l'occasion qu'offre un large usage de statistiques provenant d'un grand nombre de pays, de vérifier les statistiques nationales et d'y découvrir parfois des imperfections; 2) l'utilisation, dans bien des cas, des institutions internationales comme source capitale de statistiques.

Le Fonds projette de diffucer en 1948, l'usage du public, son bulletin *Statistiques financières internationales*, ainsi que de publier un volume annuel sur les balances des paiements.

Following the preceding paper Mr. THEODORE BESTERMAN, Director of the Library Documentation and Statistical Services of the United Nations Educational, Scientific and Cultural Organization, made a brief statement on behalf of his Organization in lieu of a report. He spoke of the very recent establishment of the statistical service of his Organization, which accounted for the absence of a report at this meeting. He announced that it was one of his duties during the Conferences to arrange with the United Nations and the other agencies for a coordinated program of statistical services. He stated that UNESCO was prepared and anxious to bear its share of the statistical activities and to enter into understandings in regard to standardization, exchange and demarcation of fields of statistics in connection with its work.

Discussion

At the conclusion of the reports, the Chairman remarked on the fact that in the presentation of these reports, each speaker had referred to the statistical activities of other Specialized Agencies and of the United Nations in addition to those of his own agency. That seemed to be clear and tangible evidence that a world statistical system was actually in process of development and that the work of the various agencies was not being conducted in isolation from each other but was being integrated into a consistent and cooperative common product. He then invited discussion or questions on the reports.

Mr. G. F. SHIRRAS (United Kingdom) raised two questions: (1) Is there sufficient concatenation among the Specialized Agencies in regard to the statistical information which they gather? (2) Where does the International Statistical Institute fit into the future pattern of statistical organizations? On the second point he referred to a paper by Mr. Rice on "A Future Role for the International Statistical Institute in International Statistics," which was scheduled for another meeting of the Conferences.

Mr. M. NSOULI (Lebanon) commented on the method of procedure of the World Statistical Congress and suggested the formation of committees to discuss practical means of achieving improvement in methodology among the national statistical offices in regard to standardization and comparability of definitions of statistical units.

Mr. POLAK, in answer to Mr. Shirras, stated that all statistics put out by international organizations could not provide the detailed information needed for special purposes. The Specialized Agencies concerned with world problems in their own fields must specialize in their own functions and integrate their statistical activities with those of other agencies.

Mr. SHIRRAS asked further, who should be responsible for the balance of payments statistics published in the United Nations statistical bulletins?

The CHAIRMAN replied that the Statistical Office of the United Nations had the function of a collecting agency as well as that of coordination among the Specialized Agencies. On balance of payments data, he believed it was agreed that the FUND would collect and the United Nations would use them for general dissemination.

Mr. V. TOLENTINO ROJAS (Dominican Republic) expressed his opinion that international agencies could not be responsible for the quality of statistics supplied by national services. He suggested roundtable meetings during the Conferences for the improvement of national statistical services through the exchange of views and the development of uniform procedures.

The CHAIRMAN stated that there had been two opposite kinds of criticism on the program of the Congress: (1) that it was too diversified to be followed easily by the participants, and (2) that it was not sufficiently detailed to cover all the necessary subjects. He believed that the program was actually well arranged, and suggested the value of informal contacts during the Conferences among persons with like interests and common problems.

Mr. E. Z. ZULAGA (Columbia) addressed a question to Mr. Polak concerning the comparability of international trade figures. He did not see how import and export figures from different countries could be made to agree, in view of the inclusion in export figures of merchandise in transit.

Mr. POLAK in answer said there were many factors affecting the comparability of trade statistics and that commodities in transit was only one of the factors. He considered it sometimes possible to improve the statistics of one country by checking with those of another.

The CHAIRMAN concluded the meeting by remarking that the resumes of progress given by the respective Specialized Agencies are of great value to those concerned with the development of a world statistical system with different parts fitting together.

RECENT DEVELOPMENTS IN STATISTICAL ACTIVITIES OF NATIONAL GOVERNMENTS

PART 1

Wednesday, September 10, at 2: 00 p.m.

CHAIRMAN :

G. Darmois

Member from France, Statistical Commission of the Economic and Social Council

The CHAIRMAN introduced in turn the representatives of the statistical services of different national governments, who presented to the meeting various reports on recent developments in statistical activities in their respective countries. At this meeting reports were given by representatives from the United Kingdom, Poland, China and Brazil. Due to lack of time, the report for Turkey, as well as all discussion on the reports, was put off till the next meeting. Two reports, from Czechoslovakia and Canada, not read at the meeting, are included with those which were orally presented as follows:

RECENT DEVELOPMENTS IN OFFICIAL STATISTICS IN THE UNITED KINGDOM

by J. Stafford

Central Statistical Office, Offices of the Cabinet (United Kingdom)

1. INTRODUCTION

In the United Kingdom, as no doubt in other countries, problems arising out of the war or out of the economic difficulties following the war have given a strong impetus to the development of official statistics. A large body of new information has had to be collected and analyzed so that the Government should be acquainted with the facts bearing upon a wide variety of problems and so that appropriate action on, and decisions about the prosecution of the war, or the readjustment of society to peacetime conditions might be made. During the war, for example, statistics were collected and presented about the use of shipping, the production and shipment of munitions, and more directly on operational matters. Similarly, problems of readjustments have made it desirable to continue the collection of such facts first obtained systematically during the war as those relating to employment, production, stocks, consumption, and usage of materials.

While the war was still in progress attention was drawn by the White Paper on Employment Policy issued by the Government to one of the more vital needs to be served by official statistics. In the White Paper, the Government accepted for the postwar world the responsibility of maintaining as far as practicable a high and stable level of employment, and accepted also the fact that this responsibility could not adequately be discharged unless ministers and officials had to assist them both for the formulation and execution of policy statistical intelligence about the condition of the economy.

2. THE STATISTICS OF TRADE ACT

This is a very summary picture of the background against which recent developments may be seen. It is not possible, nor is it necessary here, to attempt a complete catalog of recent British statistical events. All that is attempted is to choose a small number of cases from different fields which may be taken as illustrative and which may be of some general interest.

A recent event of outstanding importance in British official statistics and to economists and statisticians outside the Government service has been the passing this year of the Statistics of Trade Act. The origin of this measure is to be found in the White Paper on Employment Policy to which reference has already been made. The provisions of the Statistics of Trade Act resulted from deliberations of statisticians of the different departments of the statistics which would be required after the war to implement policy as laid down. Under emergency powers a considerable flow of statistical information has been brought into being and the question presented itself of what, if anything, of this had a purely or mainly wartime use and could be relinquished at its termination; and in what ways this information would need supplementing with the changing objectives of Government policy. The result was to obtain statutory authority for the collection of what may be regarded as a more or less permanent flow of economic statistics after emergency powers were no longer held by Government. Although other countries have such powers it may be pointed out that in the United Kingdom one must regard as a change of view of some importance the taking of express statutory powers for the collection of information for its own sake on the scale laid down in the Act.

The Statistics of Trade Act allows Government departments with the responsibilities for different sectors of the economic system to collect from business periodic statistics about economic conditions in a wide sense. The periodicity of returns is not laid down in the measure. That is, the Government may determine such with regard to the importance of different classes of information or different fields of activity.

The schedule to the Act lists the subjects on which information may be obtained, of which the more important are: employment, output and sales outgoings and capital expenditure, materials purchased for use and stocks. A good deal of information of this kind is in fact being collected currently, and a good guide to the extent of present information is to be found in the pages of the *Monthly Digest of Statistics* prepared by the Central Statistical Office with the cooperation of departments. As an example we may cite the interesting and important set of employment statistics collected by the Ministry of Labor and National Service. With few exceptions monthly returns of employment are obtained from all manufacturing establishments, with an analysis by sex, showing separately those over the insured age limit, and with breakdown between those employed on direct export and home orders. Recently the innovation has been introduced of asking employers to give an estimate of employment in the near future, but too little experience has been obtained to show whether this will provide information of value. Additionally, returns are obtained, frequently on a sample basis, from service industries so that in total the information allows month by month estimates to be made of the way in which manpower is disposed between various industries and allows a close watch to be kept on the detail of the employment situation.

Returns on production are being extended to cover new activities, particularly in the capital goods industries, while the Board of Trade has recently instituted, on a sample basis, a new system of returns of retail sales. These and other developments may be hoped to fill in some of the gaps in our monthly service of economic statistics.

One aspect of the Statistics of Trade Act may be said to relate to these short period statistics; another relates to censuses of production and distribution. The Act gives statutory force to the main recommendations of two advisory committees set up by the President of the Board of Trade, one on the census of production and the other on the projected census of distribution.

The Act makes obligatory the taking of a census of production in 1949 and every subsequent year, and repeals the Census of Production Act of 1906 which provided for quinquennial censuses. Again following the recommendations of the advisory committee, the Act allows more information to be collected than was the case in the past on such important subjects as cost of production, including the wages and salaries bill, capital expenditure, and hours worked. A partial census of production for the year 1946 has been taken for certain industries under emergency powers and the results are providing guidance about new questions which will be of value when the first full census is taken. In addition, of course, there is the considerable direct value of the partial census as a source of information on the important industries which are covered by it.

The Act also provides for the taking of censuses of distribution and services in such years as may be determined by the Government, covering subjects similar to those on which information may be collected in censuses of production, though of course it is to be expected that the primary emphasis will be on an appropriate analysis of sales.

The importance of the two censuses in the future need not be labored. They will provide a more comprehensive picture of the British economy than has hitherto been available. They will allow more up-to-date information. For national income and expenditure estimates they will, of course, be invaluable.

3. The National Farm Survey

In part, at any rate, the Statistics of Trade Act looks to the future. An interesting development of the recent past is the making of a national farm survey of England and Wales, complemented by a similar study for Scotland. The purpose of the survey has been described as the compilation of a modern Domesday Book in order to provide a record of the position of the agricultural industry.

Very briefly the data for the survey were compiled by representatives of the county agricultural committees visiting each holding of more than 5 acres during the years 1941 to 1943. Some 300,000 holdings in all were visited and the information so collected was married with the statistics given by farmers on the main annual returns. The normal June return made by farmers was amplified for the purposes of the survey by the addition of questions on rents paid and the duration of occupation of holdings.

The survey had a wide scope covering judgments on the technical efficiency of individual farmers, the technical condition of the farm as regards layout and transport facilities, public utility supplies, together with questions on rent, the type of activity carried out, and so forth.

A fourteen percent sample of the returns, stratified both by size of holding and by location, has already been analyzed and the results published. It is hoped that the full data will be of high interest for research purposes both to the Agricultural Economists Service and to others.

4. The Social Survey

The social survey is a wartime creation which had as its purpose the making of direct inquiry of the public on a variety of subjects. It is now a part of the Central Office of Information, a department of

Government. One of its recent and most interesting inquiries has been in the field of housing. In the summer of 1945 a sample of over 10,000 dwellings was taken from local authority rating lists and inquiries made directly of each household concerning the number and relationship of persons in the household, the number of habitable rooms, the broad income group into which the head of the house fell, the type of dwelling, and the like.

The results throw light upon the way in which the housing resources of the country are being used—for example, the extent of under-utilization and of over-crowding.

Another work of the social survey is the survey of sickness. This has received some publicity as a result of publication of the results in the first quarterly return of the Registrar-General for England and Wales for the year 1947. Since 1944 the social survey has each month interviewed a sample of some 3,000 persons stratified by locality. Questions are asked about illnesses, days of incapacity, and number of medical consultations.

5. National Income and Expenditure

The estimation of the national income and expenditure of the United Kingdom by official statisticians is not so recent a development as to warrant very much being said on this subject. With the very active encouragement and support of Lord Keynes, estimates were first prepared and made public for the year 1938 and 1940 for the purpose of assisting financial and economic policy during the strain of the war years. The broad lines of this work have been fully described in the annual White Papers on National Income and Expenditure. Many will be acquainted with them, the more so as work in various countries has developed along parallel lines, assisted as it has been by formal and informal discussions between people working in this field. Since these estimates were first made, continuous effort has been made to effect improvement, sharpening concepts, improving old or finding new sources of data, systematizing work, improving price data, tracking down items of income and expenditure previously overlooked, and so on.

There is one major development in this field to which attention may be called. The great deficiency in the United Kingdom estimates, as is well known, is the absence of data for measuring investment expenditure directly, thus depriving official statisticians of a valuable check on their income estimates and forcing the hazardous use of differences to provide an indirect estimate of this important and variable item of expenditure.

As in other countries, so too in the United Kingdom, steps have been taken to fill this gap. Estimates from purchasers of investment goods are being obtained in the field of public or near-public activity and official statisticians are exploring the sampling basis which may be adopted to yield similar data from the field of private business.

Again as in other countries, it is not the intention to stop short at obtaining estimates of past investment. The needs of full employment policy demand intelligence of the likely near-future movements in investment expenditure; and to provide this some thought has been given to the obtaining of forecasts from those who bear financial responsibility. At the present time in the United Kingdom, the making of such forecasts presents formidable difficulties, but a start has been made and it is hoped that figures of a more comprehensive nature will be obtained.

6. STANDARD INDUSTRIAL CLASSIFICATION

For some time statisticians of the interested Government departments, together with the Central Statistical Office, have been engaged in preparing an industrial classification which could be accepted as standard for the analysis of labor, trade, population, and other statistics. Good progress has been made in this work, and a minimum list of industries has been agreed upon and will shortly be published, so that those outside the Government service may have the best help that can be given. The starting point for this work was the classification recommended by the League of Nations.

It is unnecessary to underline the importance of this agreement. For a long time lack of comparability has been recognized as a serious disadvantage. The new classification should allow us to make better use of the data we have. It is hoped that the work will be fully completed before the various postwar censuses are to be taken.

7. THE INTERIM INDEX OF RETAIL PRICES

Recently a committee was set up by the Minister of Labor and National Service to advise on the official cost-of-living index of the Ministry of Labor, the weights of which have remained unaltered since 1914 and the food weights of which were based upon an inquiry made in 1904. The committee advised that further consideration should be given before a new permanent index was constructed, but recommended that the old index should meanwhile be withdrawn and replaced during the interim period by an index of retail prices based upon the pattern of expenditure revealed by an official inquiry into working class expenditure made in 1937-8.

The committee has, of course, recognized that the prewar consumption pattern did not necessarily have postwar validity. Indeed there is evidence that considerable shifts in consumption habits have taken place. Nevertheless, on balance, it was felt that this interim solution offered definite advantages. Confidence in the old index had diminished and it was desirable to find an acceptable substitute. Consumption patterns have recently shown considerable changes so that a postwar inquiry might reveal data of little significance for this purpose, and of course such an inquiry would take time to carry through.

Purely as an interim measure, therefore, the committee recommended and the Minister decided to use the information from the prewar inquiry until some further stability might be expected in consumption habits and until more thought could be given to the construction of a permanent index. The new interim index will be published this summer.

8. PUBLICATION OF OFFICIAL STATISTICS

It may be useful to say something here about the steps taken or in prospect to make official statistics publicly available. The Board of Trade *Journal* and the Ministry of Labor *Gazette* continue as before the war to provide statistical information of a character with which many will be conversant.

The first postwar issue of the *Statistical Abstract of the United Kingdom* is now in press, while it is hoped shortly to resume publication of the *Official Guide to Statistics.*

An important innovation in this field has been the publication of the *Monthly Digest of Statistics*. This document had a wartime origin when the need was felt to bring together for the use of Government officials the more important time series of economic statistics. With the active help of Government departments, a body of agreed statistics on a defined and consistent basis was brought together and edited by the Central Statistical Office. So far as possible, continuous series going back to prewar years have been established; so that the *Digest* is at once a recent economic history of the country and a guide to the current economic position. Its contents also provide a tolerably faithful record of the recent developments in the creation of a statistical information service in the United Kingdom.

With the termination of the war it became possible to make available to the public this collection of statistics. The demand for the document shows that it has gone some way toward meeting the needs of research workers, the business community and the informed public.

9. THE STATISTICAL SERVICE

It may not be inappropriate to conclude with a few words about what I regard as a most important development in the field of statistical organization.

During the war the Central Statistical Office was established with the primary function of serving the Cabinet with agreed and definitive statistics and to handle the many statistical problems falling outside the responsibility of any one department. Despite the name of this office there is in the United Kingdom no centralization of the collection or analysis of statistics; the functions of the Central Statistical Office are rather advisory, consultative and coordinating. Some success has been achieved in the building up of a common outlook and interest in statistical matters and in filling out the statistical service into a more comprehensive and integrated whole.

In another direction, too, an important step has been taken. Provision has been made for the establishment of a statistical service by the laying down of minimum qualifications for new entrants and by providing a regular ladder of promotion parallel to that for the administrative grades. Broadly the arrangements now in force are these: Entrants into the statistical service of the Government are recruited in the normal method, *i.e.*, by examination and competetive interview identical with those for and side by side with administrative officers. In this way it is hoped to ensure that statistical officers will have the potential administrative qualities which are regarded as essential for statisticians who may have to administer statistical departments and who will have to work upon administrative problems. In addition, recruits to these statistical service must have the requisite technical qualifications as attested by academic records or personal experience. Provision is made for the interchange of statistical staffs between the departments and into and out of the Central Statistical Office.

These arrangements are being buttressed by facilities for further technical training which, at the moment, are being provided for executive and clerical staff under the general direction of the Treasury and the Central Statistical Office.

These are recent postwar developments. It is hoped that they are soundly based and that they will promote the healthy development of official statistics which will at once contribute to the good service of the public and make a due contribution to furthering the development of the science.

Résumé

Les problèmes de la guerre et de l'après-guerre ont donné une impulsion énergique au développement des statistiques officielles du Royaum-Uni. Un certain nombre d'événéments récents dans le domaine dela statistique montrent cette extension dans différents domaines,

La loi sur les statistiques commerciales votée en 1947 est d'une im portance capitale; elle donne aux administrations gouvernementales des pouvoirs légaux pour recueillir auprès des entreprises des statistiques périodiques portant sur les conditons économiques au sens large, y compris les questions relatives aux effectifs du personnel, à la production et aux ventes, aux dépenses et immobilisations, aux fournitures achetées pour emploi immédiat ou en vue de la constitution de stocks. Cette loi rend également obligatoire en 1949 et pour chacune des années suivantes, un recensement de la production, et prévoit des recensements de la distribution et des services aux années que le gouvernement fixera.

On a également cité une enquête sur les fermes en Angleterre et au Pays de Galles, complétée par une étude similaire pour l'Ecosse; une enquête par sondages sur l'habitation au cours de l'été 1945, une enquête permanente sur la maladie qui se poursuit depuis 1944, les mesures prises pour assurer une amélioration du calcul du revenu national et des dépenses nationales, la préparation d'une classification industrielle modèle, la publication d'un nouvel indice provisoire des prix de détail remplacement de l'ancien indice officiel du cout de la vie.

Les publications statistiques officielles comprennent actuellement le *Monthly Digest of Statistics* (Résumé mensuel des statistiques), mis à la disposition du public depuis la fin de la guerre, en plus des informations statistiques que le "Journal" du Ministère du commerce et la "Gazette" du Ministère du travail continuent à fournir comme avant la guerre. Le premier numéro d'après-guerre du *Statistical Abstract of the United Kingdom* (Résumé du Royaume-Uni) est sous presse et on espère reprendre prochainement la publication de l'*Official Guide to Statistics* (Guide officiel des statistiques).

Le Bureau central de statistique, créé pendant la guerre n'est pas un bureau central qui rassemble et analyse des statistiques; il a plutôt un rôle consultatif et de coordination. Il a réussi à transformer le service statistique en un ensemble plus compréhensif et plus complet.

STATE STATISTICAL SERVICES IN POLAND

by Stefan A. Szulc
President
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I. ORGANIZATION OF THE STATISTICAL SERVICES IN POLAND

As provided by the decree of July 31, 1946, the main body concerned with state statistics in Poland is the Central Statistical Office, which reports to the President of the Central Planning Board, the planning center of national economy.

The primary functions of the Central Statistical Office are:

1. To conduct statistical surveys according to the program approved by the Cabinet;
2. To compile statistical data for the purpose of planning the national economy;
3. To coordinate and supervise statistical surveys and reporting carried on by different authorities, offices, public, and social bodies.

In addition to these services, the Central Statistical Office engages in research work on problems concerning theory, methods and organization of statistics and scientific collaboration in the statistical field with other countries.

Although statistical services in Poland are centralized, as indicated above, the Central Statistical Office has no monopoly on the collection of statistical data. Other authorities and offices may also undertake statistical inquiries, but not without consulting the Central Statistical Office and applying methods and questionnaires approved by the Central Statistical Office. This arrangement endows the Central Statistical Office with considerable authority, and should bring about, at an early date, coordination of statistical inquiries, thus making it easier to obtain necessary data.

Keeping a register of statistical inquiries falls also within the scope of the Central Statistical Office. The register will provide the Office with facilities for supervision and coordination of statistical inquiries and also enable statistical workers to secure correct information concerning the kinds of inquiries already undertaken, and the areas covered by them.

It should be noted that the authority given the Central Statistical Office has bearing on statistical work conducted not only by state authorities but also by other public and social bodies, such as self-governmental units, chambers of commerce, and social insurance centers.

In case of need to make use of evidence given by unofficial persons or private institutions, the Cabinet has the power to impose upon these individuals or institutions the obligation of answering statistical inquiries. This information, regarded as confidential, may be used solely for statistical surveys, and is not to be given either to public authorities, private institutions, or individuals for any other purpose.

The regulations of the law on the organization of state statistical services have not yet been brought fully into operation, particularly as regards the register of statistical inquiries and the approval of statistical questionnaires by the Central Statistical Office. These shortcomings are due to the fact that in the early stages of reconstruction and reorientation of statistical work the primary concern was to get any and all statistical estimates, and the orderly procedure was deemed secondary.

The trend in the operation of statistical services gives a basis for a forecast that in the future most major statistical surveys undertaken by the Government will be conducted by the Central Statistical Office.

II. Work Carried on by the Central Statistical Office

The present situation concerning the main sectors of work carried on by the Central Statistical Office may be represented as follows:

1. Population and Vital Statistics

On February 14, 1946, a population census was taken. The information obtained was limited to sex, main age groups, and nationality. Despite this limitation it supplied the first reliable estimate of Poland's postwar population and its distribution.

Because of radical changes in population since the above census was taken, plans are being made for a new population census early in 1948.* This census is also to be limited, but less so than in 1946. The field work will cover the entire population of the country, but in order to obtain the results of the census as promptly as possible the sampling method will be applied to the major part of tabulation, especially cross-tabulation.

Migration movements of Poland's population play a very important part in its composition and distribution status. Poles scattered all over the world come back to their country and those from overcrowded Central Poland settle on recovered territories. Germans are repatriated to Germany; Ukranians, Byelorussians, and Lithuanians to the U.S.S.R. The statistical services report all these migration movements comprising several million people, but cannot register much more than the direction of migration and the number of people involved.

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*According to later information received from the author of this report, the 1948 census had to be postponed on account of technical difficulties. A detailed population census, together with a census of agriculture and industry, is projected for 1050.——ed.

The system of filling out registration forms when change of residence in Poland occurs will possibly ensure, in the near future, facilities for collecting migration statistics, particularly in regard to the shifting of population from rural districts to towns.

Problems of collecting accurate vital statistics have not yet been successfully solved. Until the end of 1945, marriages, births, and deaths were registered in the major part of Poland by the clergy. Since January 1, 1946, civil register offices have been established all over Poland, but it has led to much confusion. Many marriages are not registered in these offices, neither are all births or deaths. The Central Statistical Office has satisfactory tentative data concerning the general trend of births and deaths. However, a long time will elapse before accurate and complete statistics can be obtained. Statistical data on deaths in large towns are the only satisfactory estimates at present available.

2. STATISTICS CONCERNING ECONOMIC CONDITIONS

Agriculture. Accurate statistical data on agriculture are difficult to obtain, owing to the destruction of many civil documents, such as land and mortgage survey registers. The land reform (parcelling of large farms) brought into being a large number of farms whose areas have not yet been accurately surveyed. Similarly, the acreage of settlers on farms on recovered territories is not always ascertained. At the present time, only land surveys are being made and recorded in new registers. The poorly qualified administrative staffs in some small communities have also been an obstacle to the collection of statistical data.

Statistics on agricultural production are based on:

(1) Any annual census of cultivated land and sown acreage, undertaken annually in late June by the administration of rural communities.

(2) Estimates of yield per acre, made after harvest by special appraisal commissions in the communities.

In addition, the Central Statistical Office gets data from about 3,600 rural agents who report monthly, and in some seasons fortnightly, on many phases of agriculture. For example, recently there was a proposal made to initiate estimates of milk and egg production through the reports of the rural agents.

Inasmuch as the 1946 census of cultivated and sown land did not give correct estimates, dispositions were given for special additional inquiries in about a hundred rural localities all over Poland, to be undertaken by district land surveyors in the course of the current year.

A livestock census is conducted annually as of the first of July.

Industry. In the middle of 1945, a brief census of industrial plants was taken with particular regard to damages in buildings and power equipment. This census included all industrial plants and handicraft workshops employing five or more workers.

On the basis of evidence given by taxpayers to the treasury, statistical data are collected for all industrial plants classified by branch of industry and by ownership (governmental, self-governmental, cooperative or private). These data cover only the number of plants and the number of persons employed.

Annual statistical surveys of industrial production cover plants where five or more workers are employed, while monthly surveys deal only with plants employing 20 or more workers. These reports relate to volume and value of production, power distribution, materials used in production, fuel and oil consumption. Production is evaluated in gross figures—total value of manufactured products—but due to detailed account of materials used in production, fuel, etc., there is also a possibility of estimating the net value. The value is given in current prices. However, as prices fluctuate greatly, stable prices of 1937 are also quoted, which makes it possible to reckon the production output index. Products are reported according to a special classification containing nearly 5,000 items. This enables the Central Statistical Office to apply uniform questionnaires to all production branches.

At present there are published two indices of industrial production: (1) a comprehensive index prepared by the Institute of National Economy; (2) an index of the output of basic commodities, based on somewhat different principles, issued by the Central Statistical Office.

Foreign trade. Only in the last few months has the Central Statistical Office succeeded in organizing adequate statistics in respect to foreign trade, based on reports made by importers and exporters at the custom houses. As the value of imported and exported goods cannot be exactly reckoned, these statistics relate only to volume of trade. Along with this there are published statistical estimates on the basis of reports on fulfilment of trade agreements. These estimates include also the value of commodities according to prices taken as the basis for the clearing account with foreign countries.

Statistics of commercial enterprises will be carried on along the same lines as those of industrial plants on the basis of reports given by taxpayers to the treasury.

Price statistics reveal the aspect of retail free market prices for foodstuffs, industrial produce, and services in more than 200 towns. Reports of rural agents are used as a basis for statistics both on local prices received by farmers for agricultural products and on prices paid by farmers for some industrial commodities.

Statistics of wholesale prices have not been compiled so far, due to the consistently important disparity in prices obtained for the same commodity under different conditions in controlled trade and on the free market.

There are several price indices calculated: a cost-of-living index for the two largest towns, Warsaw and Lo'dz'; indices of food prices in eight towns; and indices of different commodity prices in Warsaw and Lo'dz'.

Family budget surveys, that is, inquiries into family living expenditures, now cover only a small number of families. Plans for large-scale inquiries in different centers of the country are in process of being mapped out and will shortly be put in operation.

Statistics of salaries and wages are difficult to evaluate as the system of payments is rather intricate. Those payments are made in cash, in kind, and in allotments for prices lower than free market prices. As there is now a trend toward transition to wages and salaries paid fully, or almost fully, in cash, it is possible that these statistics will be usable in the near future. Annual and monthly reports of industrial plants give ample supply of material for this purpose.

3. OTHER BRANCHES OF STATISTICS

The summary given above cites only the major statistical inquiries conducted by the Central Statistical Office. Surveys concerning statistics on income and the turnover tax, communal finances, and statistics dealing with all aspects of cultural events, which comprise a wide range of problems, have not been mentioned, nor has mention been made of statistical work undertaken by other governmental offices within the orbit of their activities, as, for example, statistics of railway transportation conducted by the Ministry of Communications which cover a large field and are important to the general economy of the country.

At present the Central Statistical Office issues *Statistical News*, a fortnightly review, and publishes the *Statistics of Poland*, a series which give detailed results of statistical surveys. The first postwar edition of the *Statistical Yearbook* will be ready shortly.

This review will not be complete without mention of the Library of the Central Statistical Office. Before World War II, we were proud of having been placed on the mailing list of almost all countries for exchange publications. Works dealing with the theory and practice of statistics were collected by us on a worldwide scale. Under the German occupation and during hostilities, the library incurred some losses, but its nucleus remained intact. Now the exchange of publications with foreign countries has been resumed, although it is more restricted than before, due to transportation difficulties. The library comprises some 70,000 volumes, and is again invaluable as an aid to all research workers, in statistics.

4. FINAL REMARKS

Statistics in Poland have had an established tradition since World War I. However, when work was resumed early in 1945, we felt that we had started it anew because great damage and important changes had occurred. The resumption of statistical work was greatly impeded by the loss of scientific and technical workers who died or were murdered by the Germans during the war. For these reasons, despite considerable progress already made, a long time will elapse before we are fully satisfied with the work being done.

Résumé

La présente note a pour objet de décrire les fonctions de l'Office central de statistique telles qu'elles ont été fixées par le décret du 31 juillet 1946. Les travaux qu'accomplit l'Office central de statistique sont les suivants:

1. *Statistiques démographiques.* Un recensement limité de la population a été effectué le 14 février 1946. On projette de procéder en 1948 à un autre recensement de caractère également partiel pour lequel on utilisera des méthodes de sondage pour l'établissement des statistiques. On enregistre les mouvements importants de population ainsi que la direction de ces migrations et le nombre de personnes qui y prennent part. Des bureaux d'état-civil ont été créés depuis le 1er janvier 1946 mais on n'y enregistre pas la totalité des mariages, des naissances ou des décès.

2. *Statistiques de la situation économique.* On recueille des statistiques agricoles auprès des autorités des collectivités rurales et on les complète à l'aide des rapports de 3,600 agents ruraux et des enquêtes spéciales faites par les cadastreurs de district. Il est établi des statistiques annuelles sur la production industrielle portant sur les entreprises employant au moins 5 ouvriers et des statistiques mensuelles portant sur les entreprises qui emploient au minimum 20 ouvriers. L'Institut de l'économie nationale publie un indice de l'ensemble de la production industrielle; l'Office central de statistique publie un indice de la pro-

duction des produits de base. Les statistiques du commerce extérieur, donnant les chiffres des importations et des exportations n'existent que depuis ces derniers mois. Plus de deux cents villes dressent des statistiques des prix de détail; plusieurs indices des prix sont établis pour Varsovie, Lodz et d'autres villes.

3. *Autres catégories de statistiques.* Indiquons en passant diverses autres études statistiques concernant les revenus, l'impôt sur le chiffre d'affaires, les finances communales, les manifestations culturelles et les transports ferroviaires. Mentionnons les publications et la bibliothèque de l'Office central de statistique.

THE INDEPENDENTLY CONTROLLED STATISTICAL SYSTEM OF THE CHINESE GOVERNMENT

by Jennings P. Chu
Director of Statistics (China)

The independently controlled statistical system of the Chinese Government has its origin in the establishment on April 1, 1931, of the Directorate General of Budgets, Accounts and Statistics, now in its sixteenth year. Its unique feature lies both in the central control over statistical personnel and technique by the highest statistical body in the National Government and in the free performance of statistical functions in various Government organs, central and local. It is a system which departs considerably from the American type of individual adaptation, and yet is by no means patterned after the dominant European type of high centralization. It attempts to merge the two and benefit by the advantages of both. The following will serve to give a short account of this so-called independently controlled statistical system of the Chinese Government.

1. ORIGIN AND ESTABLISHMENT OF THE SYSTEM

I wish to recall to you the circumstances that prevailed in the early years of the Republic. With the chaotic political situation that succeeded the Chinese Revolution in 1911, government finance was in urgent need of reform. Military governorship, accompanied by nepotism and corruption, was prevailing. Upon the successful completion of the Northern Expedition in 1927, the unification of China was achieved. The National Government was contemplating the introduction of financial reforms. At the instance of the Ministry of Finance, a commission of financial experts were invited to China from the United States, headed by E. W. Kemmerer, and known as the Kemmerer Planning Commission. The main objective of the Commission was the establishment of an independent financial control system, for the application of a sound fiscal policy. Thus the Commission proposed the establishment of an Office of the Comptroller General, directly responsible to and under the jurisdiction of the National Government, with powers of financial planning, budget preparation and enforcement, accounting, fiscal control, supervisory inspection, and audit. After deliberation by the legislative body, it was decided to institute the Directorate General of Budgets, Accounts, and Statistics, with three organs framed within it, namely: the Directorate of Budgets, the Directorate of Accounts, and the Directorate of Statistics.

The service performed by the Directorate of Statistics is not restricted to the field of finance, but also embraces the national census, statistics of public services, government personnel and their work, etc., and has proved to be of immense value in government planning, execution and investigation.

Successful application of an independently controlled statistical system could only fulfill its expectations through the establishment of the Directorate General itself, superstructured in the Government administrative machinery. Its legal status is based upon the Organic Law of the Directorate General of Budgets, Accounts and Statistics, the By-Law Governing the Installation of Budgetary, Accounting and Statistical Personnel within Government Offices, the insertion within the organic laws of various government organs of clauses effecting the installation of accounting and statistical units, and such other fundamental laws as the Statistics Law and the Census Law.

2. CHARACTERISTICS OF THE SYSTEM

The independently controlled statistical system has five main characteristics:

(1) The character of independency. It has a three-fold implication: (a) independence in the organization of statistical units; (b) independence in the selection of statistical personnel; and (c) independence in the performance of statistical work. To ensure the above independent characteristics, the highest statistical body is framed within the structure of the National Government.

(2) The character of liaisonship. The independently controlled statistical system is neither centralized, nor decentralized, but a combination of the two. In this system the highest controlling body is the Directorate General, while actual statistical functions are performed by statistical units installed within government organizations. The essential feature of liaisonship is a team performance with a high degree of uniformity derived from central control and adaptability to local needs.

(3) The character of uniformity. The installation of statistical units in various government organs is decided by the Directorate General, as justified by actual needs and circumstances. The appointment, removal, transfer, and examination of personnel are centralized. The assignment, methodology, projects, forms, devices, and classification of statistical subjects are either centrally controlled or uniformly ruled by

the Directorate General. It has proved to be both comprehensive and practical.

(4) The character of specialization. The selection of statistical personnel, in comparison with other government functionaries, is conducted under a far more rigid process. Authorship of statistical books or professorship in statistical courses is an essential requirement for the selection of senior members of the service. As to the other staff members, they are required either to have selected courses on statistics in college or to have passed the civil examination for statistical personnel.

(5) The character of interdependence. The three functions administered by the Directorate General are highly interdependent. Statistics of public services and of finance serve as a basis for budget preparation, budget gives rise to accounts, accounts result in financial statistics, and eventually, financial and other statistics form the basis of preparation for the budget.

3. Powers and duties of the Directorate of Statistics

The supreme body in charge of statistical functions, as has been pointed out, is the Directorate General of Budgets, Accounts and Statistics, under the direction of a Comptroller-General and ten Comptrollers. The Comptroller-General, under the jurisdiction of the President of the National Government, is in charge of all functions, directing and supervising all personnel in the performance of their duties pursuant to law. Among the ten Comptrollers, six of them are recommended by the Comptroller-General for appointment by the National Government, as Directors and Deputy Directors, respectively, of the Directorate of Budgets, the Directorate of Accounts and the Directorate of Statistics. The administration is conducted partly on an executive and partly on a committee basis.

The powers and duties of the Directorate of Statistics are: (1) the direction and supervision of statistical personnel and statistical functions. (2) the designing and issuing of statistical forms, and the enforcement of uniform procedure in statistical tabulation and compilation; (3) the assignment of statistical work and the fixing of the statistical scope in each government department; (4) the undertaking and the compilation of the National Census statistics; and (5) the compilation of the National Statistical Report; and (6) the investigation of administrative efficiency and the compilation of statistics of administrative results.

4. Designing the Enforcement of Statistical Projects

The statistical projects as formulated and enforced by the Directorate of Statistics, pursuant to law, consist of the following:

(1) The Population Census Project. In 1943 the Population Census Law was promulgated by the National Government, and the Directorate of Statistics formulated Hsien (County) Population Census Project. On account of her large territory and population and restricted means of communication, China is not yet suitable for the taking of a population census on a nation-wide scale, hence the Law allows the census to be conducted on a local basis. From 1942 to 1945 population censuses were undertaken in nine hsien (counties) in Szechwan Province and two hsien in Sikang.

(2) The Commodity Prices Project. During the war, price inflation, gaining momentum, gave rise to the formulation in 1942 of the Commodity Prices Statistical Project, with carefully planned uniform methodology. This involves the compiling of four price indices, namely: the Wholesale Commodity Price Index, the Retail Commodity Price Index, Government Office Appliances Price Index, and Government Service Personnel Cost-of-Living Index. These four indices are published on the tenth of each month, and are considered as the most thorough, extensive, accurate and timely indices compiled in China.

(3) The Public Services Project. Consisting of two separate parts, one for the Central Government and the other for local governments, the project is one of the most extensive and complex of government statistical projects. It classifies statistical materials into 40 divisions, 235 sub-divisions, and 1,072 table heads for the Central Government; 28 divisions for provincial and municipal governments, and 24 divisions for hsien governments.

5. PUBLICATION OF STATISTICAL REPORTS

The main statistical publications of the Directorate of Statistics are as follows:

(1) *The National Statistical Report and Abstract.*

(2) *The Statistical Analysis of National Problems Series.*

(3) *The Statistical Monthly,* first published in October 1931, and to date has reached its 118th number.

(4) Two Statistical Handbooks, one on the State of the Nation and the other on Economic Trends, submitted periodically to the President of the Republic for administrative use.

(5) *The China Statistical Yearbook,* the first to be released by the end of this year.

6. STRUCTURAL ESTABLISHMENT

The scheme for the establishment of statistical units was started with the Central Government organs, then extended to local governments and to government enterprises.

As of the end of June 1947, there are eight Bureaus of Statistics and 660 Offices of Statistics in the principal and subordinate organs of the Central Government. In the provinces, municipalities and hsien, there are 32 Bureaus of Statistics and 1,196 Offices of Statistics. The total number of Statistical units throughout the country is 1,905 and the total number of service personnel is 4,946, without counting the Directorate of Statistics itself with a staff of 120 people.

7. FUTURE PROJECTS

The Directorate of Statistics is exerting all its efforts to promote and expand the statistical services, and has formulated plans for the realization of the following:

(1) Completion of a Statistical Network. Statistical units have been installed within the main branches of central, provincial, and municipal governments; within the scope of hsien governments and government enterprises, much awaits further achievement. It is of the utmost importance that statistical units in these minor government organs and government enterprises should be installed on a large scale, slowly but surely.

(2) Reinforcement of statistical recording methods for the attainment of comprehensive, accurate, and timely results.

(3) Replenishment of statistical data with the installation of statistical files under the supervision of trained personnel.

(4) Cooperation in the National Census. Since the promulagation of the Population Census Law in March 1947, the work of the National Census was transferred to the Ministry of the Interior with the Directorate of Statistics cooperating. A population census on a nation-wide scale has been projected for 1950.

To conclude, may I add that we have to bear in mind that the statistical system in China was inaugurated on the eve of the Japanese invasion of Manchuria, and its progress was hampered and its activities paralyzed on account of the Sino-Japanese War. Yet it is gratifying that during such a period when all efforts were marshalled for the prosecution of the war, the Government still fostered the promotion of the statistical system. With victory achieved, China is heading for democratic reforms, reconstruction, and rehabilitation. The world is united now more than ever, and international cooperation is aiming at worldwide stabilization and prosperity. All this leads to an extensive demand for accurate and timely statistical information for internal as well as external use, and towards this goal the Chinese Government is determined to keep abreast of the advanced countries of the world.

Résumé

Le système de statistique actuel du Government chinois a pour origine la création, en 1931, de la Direction générale du budget, de la comptabilité et de la statistique. Il présente un caractère qui lui est propre: les statisticiens et les méthodes de statistique sont soumis à un contrôle central exercé par l'organe supérieur de statistique du Gouvernement national et les différents organes du Gouvernement tant centraux que locaux s'acquittent, comme ils le jugent bon, de leurs fonctions en matière de statistique.

Les pouvoirs et les attributions de la Direction de la statistique comprennent: 1) la direction et le contrôle des statisticiens et des travaux de statistiques; 2) l'élaboration et la diffusion des questionnaires pour les statistiques ainsi que la mise en application de méthodes uniformes pour l'établissement des tableaux et le rassemblement des statistiques; 3) la répartition des travaux statistiques et la détermination des matières sur lesquelles chaque département administratif devra dresser des statistiques; 4) le rassemblement et l'établissement des statistiques du recensement national; 5) l'élaboration du rapport statistique sur le recensement national; 6) des enquêtes sur le rendement de l'administration et l'établissement de statistiques sur les résultats de l'administration.

Les programmes de statistiques élaborés et exécutés par la Direction de la statistique comprennent: 1) un recensement de la population; 2) des statistiques des prix des produits de base; 3) des statistiques de services publics.

Les principales publications de la Direction de la statistique sont les suivantes: rapport complet et rapport résumé sur la statistique nationale, l'analyse statistique des séries relatives aux problèmes nationaux; le *Bulletin mensuel de statistiques,* deux manuels de statistiques concernant la situation nationale et les tendances économiques actuelles, et l'*Annuaire statistique de la Chine* dont le premier numéro doit paraître d'ici la fin de 1947.

COORDINATION OF NATIONAL, STATE AND MUNICIPAL STATISTICS THROUGH THE BRAZILIAN INSTITUTE OF GEOGRAPHY AND STATISTICS

by Afranio de Carvalho
Director, International Documentation Division
Brazilian Institute of Geography and Statistics

Coordination is a problem everywhere. The difficulty in solving this problem is greater in a federal country on account of the division of powers among the federal, state, and local governments. Naturally every country will try its own methods to satisfy the necessities of coordination within its governmental organization.

As far as statistics are concerned, Brazil had recourse to a solution by creating the Brazilian Institute of Geography and Statistics, whose principal objective is to promote the coordination of national, state, and municipal statistics. This creation was made possible, thanks to a collective agreement entered into by the federal and state governments, with the support of the municipal governments, in a statistical convention signed in 1936. Incidentally, the Institute is the result of the persistent efforts of education of a statistician whom you know very well. He is Teixeira de Freitas, President of the Inter American Statistical Institute.

The organization of the Brazilian Institute of Geography and Statistics is founded on the principles of the centralization of technical guidance and the decentralization of the operative work; the latter being accomplished by the federal, state, and local offices. As for the local offices or agencies which exist in all municipal communities and number now approximately 1,700, each of them has equipment in accordance with its importance.

As the geographical services are to a certain extent complementary to those of statistics, the Institute takes charge of the control and development of both activities so the different techniques and procedures in both these fields may be brought into uniformity throughout the country. On the other hand, expenses are not duplicated because one single service supplies information for the three levels of governments concerned.

One of the first jobs of the Institute was to secure a certain stability of the territorial divisions of the country. The statistical data have to be classified very often according to geographical units and constant changes in the territorial divisions are a problem to that classification. Therefore, it was proposed and established that changes cannot take place at irregular intervals but should, on the contrary, be permitted only every five years, that is, on the same date for the whole country. Changes are permitted at the end of the years ending in three or eight before and after each decennial census. A five-year period for judicial divisions was confirmed by the new Brazilian Constitution.

At the same time, other purposes are simultaneously pursued as a complement to the relative stability of the internal territorial division, as follows:

(a) Coincidence between the boundaries of administrative and judicial divisions, so that the latter will be formed by grouping whole units of the first;

(b) Identity of names by which the administrative and judicials divisions are called, it being prohibited that a subdivision, administrative or judicial, bear a name different from that of its seat;

(c) Transfer of whole minor civil divisions and not parts of them, whenever an administrative unit is dismembered;

(d) Description of the limits of administrative units according to natural boundaries or easily recognizable contours, it being prohibited that there be lack of continuity of the areas included within said units;

(e) Land-mapping of all administrative units according to minimum standards previously fixed, on the occasion of the periodic territorial division;

(f) Delimitation of the urban area of every seat of the administrative division or subdivision on the occasion of the territorial division, so that it stands clearly separate from the rural area.

With reference to this last point, it must be explained that the urban area includes the suburban fringes, that is, the surroundings which belong essentially to it, for the development of dwellings and of industrial and commercial buildings. As a consequence, municipal regulations in the dimensions of residential lots, structure and height of buildings, alignment, and so on, will prevail only within the limits of the urban area.

The legal and definite separation between urban and rural areas not only brings a number of administrative advantages but also affords an easy and immediate means of classifying the population as urban or rural. This classificotions, far from being an obstacle, permits easy convertibility to all the usual classifications according to the number of inhabitants or the density of population.

As a rule, data collected by the local agencies are combined into state totals by the State Department of Statistics or one of its branches, and into both state and national totals by the Institute or one of the federal branches located in some of the ministries in Rio de Janeiro. That is the case, for instance, of the educational and cultural statistics which were first to be collected, reviewed, and published on a cooperative basis. As a matter of fact, it was this convincing experience with these statistics which were an objective of the Covenant signed by the Federal and State Governments in 1931 that led the same parties to sign the Convention of 1936 by which that partial objective was transformed into a general one. The coordination of the educational and cultural statistics was extended to an over-all coordination.

Similarly, data on agricultural statistics are collected, reviewed, and published on a cooperative basis. Forecasts of crops at the time of planting, and later on its confirmation, are made locally every three months, thus accompanying the changing conditions of cultivation. Copies of these successive data prepared by the local agencies on the basis of information obtained from the principal farmers are simultaneously available for the State and the Union. Notwithstanding the notorious difficulties of crop estimates and measurement of agricultural output, particularly emphasized in the case of Brazil, this new experience of coordination is a very encouraging one.

Another feature of the work done lately by the Institute is related to the foreign and domestic commerce of the country. These statistics are not easily collected on account of the number and diversity of the documents from which they are extracted. In order to facilitate the collection and coordination of trade statistics, it is proposed that only one official document, or "*guia*", is to be used for the transfer of merchandise from any part of the country to another, or to a foreign country. Whatever formalities that need to be fulfilled at the point of departure, at the destination, or in transit relating to the merchandise, including visas, will be certified on the said document, without requiring new ones.

When one considers the ever-increasing quantity of documents officially required, at least in Brazil, to transport goods from one part of the country to another, one may realize the relief that will be brought to commerce if the proposed legislation is enacted. Though the police power of the administration may vary significantly from time to time, as well as from one country to another, according to the role which the government considers it convenient to accomplish with respect to the economy, it will be exercised in any case with minimum nuisance to the public. At the same time, comparability of data will be made easier in the domestic and foreign trade due to the adoption of the common standards of classification with a convertibility index.

Therefore the Brazilian Institute of Geography and Statistics, in order to promote the coordination of national, state, and municipal statistics not only takes all the necessary administrative measures, but also makes suggestions for the improvement of legislation concerning its general objective.

Résumé

L'Institut brésilien de géographie et de statistique est chargé, entre autres tâches, de travailler à la coordination des statistiques de la nation, des Etats et des communes au moyen d'une convention de statistique conclue en 1936 entre les autorités fédérales, celles des Etats et les autorités municipales. L'organisation de l'Institut est basée sur le principe, la centralisation de la direction technique et sur celui de la décentralisation des travaux d'exécution.

L'Institut a réussi à obtenir une certaine stabilité des divisions territoriales intérieures en faisant adopter une loi qui ne permet de modifier ces divisions qu'à des époques déterminées, une fois tous les cinq ans. Une loi analogue réglant la délimitation des zones urbaines fournit un moyen facile de classer la population en population urbaine ou rurale.

Les données statistiques sont recueillies par des bureaux locaux; les totaux des Etats sont calculés par le département des statistiques des Etats et les totaux des Etats et de la nation sont établis par l'Institut ou par l'une de ses sections fédérales. Ces statistiques portent sur l'enseignement, les activités culturelles, l'agriculture, le commerce extérieur et le commerce intérieur.

Pour faciliter le rassemblement et la coordination des statistiques commerciales, l'Institut a proposé l'adoption d'une seule pièce officielle pour tout transport de marchandises à l'intérieur du pays ou vers l'étranger. Il sera plus facile de comparer les données concernant tant le commerce extérieur que le commerce intérieur si l'on adopte des normes communes de classification et un barême de convertibilité.

RECENT DEVELOPMENT IN THE STATISTICS OF CZECHOSLOVAKIA

by F. Fajfr
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As a consequence of international events preliminary to and accompanying the last war, the Czechoslovak Republic was torn asunder into four parts (not considering some small territories which were incorporated into Poland). At the end of 1938, considerable parts of the borderland in the western part of the country were incorporated into Germany and the major part of the Czech population expelled. Southern regions of Slovakia and the eastern extremity of the Republic (Subcarpathian Ukraine) were annexed by Hungary. In March 1939, Slovakia proclaimed its independence and the remaining territories—Bohemia and Moravia-Silesia—were occupied by the Germans who made them into a protectorate. These four territories underwent a series of sudden changes of public administration, and even of legal structure, which led to widely different results.

This lack of uniformity on the administrative and legal levels became, after the liberation, a serious but not sole check on the efforts toward a quick resumption of statistical work in Czechoslovakia. Other impediments to statistical activities were overnight changes in managing personnel of most private undertakings, especially in industry, of all State, district and local officers, as well as the transfer of the German population in 1945 and 1946 and the resettlement of the abandoned localities by the Czechs, which resulted in unprecedented movements of the population. Until Munich, the State Statistical Office in Prague had exclusive charge of investigations for the whole of the State territory. But during the war the then so-called Slovakian State set up a Statistical Office of its own, which after the liberation of Czechoslovakia continued and has been continuing its work. At present certain categories of statistical investigations are centralized in the State Statistical Office in Prague, and for the rest, national data are obtained by adding the data for Slovakia furnished by the Statistical Office in Bratislava to those referring to the western provinces (Bohemia and Moravia-Silesia).

In the summer months of 1946 the State Statistical Office began to lay the foundation of external statistical services, but restricted at this tentative stage such activity to the western provinces and covered only part of the program. The western provinces have been subdivided into 63 statistical districts; and for each district a special officer of the State Statistical Office (District Statistician) has been appointed, who is for the time being charged only with promoting local statistical activities. Above all, he summons overdue reports and takes an active part in the preliminary steps of very urgent statistical inquiries. This system is working well on the whole, and the State Statistical Office proposes to extend the network of District Statisticians and to widen the scope of their activity.

The number of municipal statistical departments has increased since the liberation. The following towns have special statistical bureaus: Prague (population 910,000), Brno (266,000), Ostrava (172,000), Bratislava (126,000), Olomouc (54,000). The establishment of further statistical bureaus is being discussed with reference to Plzen (116,000), Liberec (49,000), and Opava (29,000).

The principles underlying Czechoslovak statistics have been laid down by the Act of January 28, 1919, No. 49 Sb., which established two organs to deal with statistics, the National Council for Statistics and the State Statistical Office. The National Council for Statistics is composed of representatives of the central administration, economic institutions, and scientific experts. It is an advisory body passing recommendations with power of decision as to scope and method of statistical investigations. The State Statistical Office is the executive organ, and as such has to carry out the decisions made by the Council. Everyone —whether a natural or moral person—is required to give prompt and correct information in reference to statistical inquiries decided upon by the Statistical Council; he may be compelled by fines or otherwise to have the required investigations effected on his premises and at his expense. In urgent instances, decisions of the Prime Minister may be substitued for those of the Statistical Council.

Under the Act of October 2, 1946, No. 195 Sb., any person desiring to carry out statistical investigations has to apply for preliminary permission from the Statistical Office, which may be declined or granted, subject to specified conditions. This provision is intended to limit the number of non-official statistical investigations.

In the autumn of 1945, big industries, banks, and insurance companies were nationalized. Moreover, those undertakings were confiscated whose former owners were Germans or persons found guilty of collaboration with Germans; such property is temporarily in charge of specially assigned trustees (so-called "national trustees") and will in due time be returned either to private enterprise or run on a cooperative basis or attached to nationalized industries.

In the autumn of 1945, the Two-Year Plan Act was published. On January 1, 1947, the Czechoslovak economy inaugurated the Plan regime. The preparation and the carrying out of the present plan as well as preliminary work to set up another plan for 1949 and subsequent years—these are the new tasks of the Czechoslovak Statistical Office, in addition to considerable extra work resulting from the postwar change-over, special issues raised by winding up the consequences of German occupation and the necessity of dealing with considerable changes of population (the German transfer and the resettlement). Special difficulties are daily arising, owing to the newness of the problems connected with nationalized economy and planning.

The new organizational forms of Czechoslovak national economy and planning are not yet definite. It may suffice to point out that within the western provinces all undertaking, whether nationalized, cooperative, or private, are liable to membership of corresponding national federations of industries, crafts, and trades. In such a way the task of the Czechoslovak statistical work is much facilitated. The federations themselves, as well as their sections corresponding to the single branches, are cooperating not only in directing economic life, but also in planning and in statistical investigations.

Under the decree of the President of the Republic of August 28, 1945, an Economic Council was set up consisting of nine Cabinet ministers of economic departments and a few other members. On this Council devolves the task of working out plans in all the fields of economic life and supplementing them whenever necessary, and of recommending specific measures and targets in view of the fulfillment of the plan.

In November 1946, a special State Planning Office was set up whose duty it is to perform all preliminary work concerned with planning. The highest body of planning is the Central Planning Commission of the Economic Council, who submit recommendations to the Government. As to the plan itself, it becomes law on being approved by the National Assembly.

For the present, new legislation on the organization of industry and industrial planning is being discussed, as well as new legal provisions concerning statistical returns.

Ever since the liberation the State Statistical Office has been endeavoring to restart every kind of statistical investigation that had been discountinued during the war. The following are some of the most important new branches of the statistical service:

In order to secure basic data with a view to establishing a plan for the rehabilitation of localities destroyed or damaged by war as well as for further development of the building program, a census of housing was carried through in January 1946. The results may prove of interest to the international public insofar as they cover all localities, including the countryside. It is hoped that these results may enable us to proceed in the near future to a sampling investigation of the rural housing conditions, which is intended to throw light on the deeper problems involved.

In Czechoslovakia, as in many other countries, the ration system obtaining during and after the war has offered unprecedented facilities of investigating closely the demographic movement as shown by food distribution statistics, which have been compiled at monthly intervals ever since the autumn of 1939. As the general provision situation is improving there has been evidence, since 1946, of people caring less and less for exact registration for allocation of food cards, and consequently the reliability of these statistical data is on the decline. This was one of the motives for the Population Census of this year.

At the same time, all the emergency changes of population to which World War II had given rise were covered by this investigation, such as deportation for political and racial reasons, and for the purpose of securing manpower; as well as direct loss of life due to the war, the transfer of the German population, and the repatriation of Czechoslovak nationals.

Most important changes have taken place in industrial statistics, which will be described in another report.

Résumé

Il n'a pas été possible de réaliser, après la guerre, une reprise rapide des travaux de statistique en Tchécoslovaquie en raison du manque d'unité administrative et juridique entre les différentes parties du pays, des changements brusques dans le personnel de direction de la plupart des entreprises privées et de mouvements de population sans précédent. A l'heure actuelle, certaines données statistiques sont centralisées par l'Office national de statistique à Prague. D'autres données, concernant la Slovaquie sont fournies par l'Office de statistique de Bratislava.

Les provinces occidentales sont subdivisées pour les besoins de la statistique en 63 régions ayant chacune à sa tête un statisticien régional. Il existe dans cinq grandes villes des bureaux de statistique municipaux, et on envisage d'en créer dans trois autres villes.

L'organisation de la statistique en Tchécoslovaquie est confiée au Conseil national de statistique et à l'Office national de statistique. Le Conseil national est un organe consultatif; l'Office de statistique, un organe exécutif. Depuis la fin de la guerre, on a créé un conseil économique comprenant une commission centrale de planification dont les travaux doivent assigner de nouvelles tâches à l'Office national de statistique.

Parmi les travaux récents les plus importants de l'Office de statistique figurent un recensement des logements effectué en janvier 1946 et un recensement de la population effectué en 1947, et reflétant tous les changements démographiques exceptionnels dûs à la Deuxième guerre mondiale.

SOME RECENT DEVELOPMENTS IN CANADIAN OFFICIAL STATISTICS

by Herbert Marshall

Dominion Statistician (Canada)

Since 1939 the Dominion Bureau of Statistics has faced a multitude of new problems. In Canada, as elsewhere, the war has been followed by postwar readjustment and each of these periods has demanded of us a measure of reorganization and of adaptation to changed circumstances. In the face of the expanding needs of the users of statistical data, it has been difficult indeed to cope with the volume and insistence of current demands in spite of additions to our personnel. The Bureau has almost doubled in size in the past eight years and now has a continuing staff of over 1,100. Internal changes have proceeded step by step, but a review of this whole period shows the Bureau to be hardly recognizable today in many phases of its work for what it was before the war. There are many reasons for this development.

In the first place, it is a result of the increasing amount of direction and planning undertaken by the Government during the war. Even now, with governmental controls largely discontinued or announced to be in process of removal, the increased scale and complexity of economic problems has required the Government to regard statistical services in a new light, as a vital source of current information in many fields. The results of statistical surveys are even now awaited by responsible senior officials in various departments, with a sense of urgency almost as great as at the peak of the war. Statistical services provided in connection with housing, agricultural prices, external trade, the cost of living, the supply of key commodities, the composition of the labor force, and the flow of income—these may be cited as a partial list of items regarded as of key importance at each successive date of publication. The levels of international trade and of domestic spending are regarded as of focal importance and the repercussions of a multitude of related factors must be scrutinized with care. Staffs concerned with the implications of current economic problems are now set up in many of the departments of the federal and provincial governments. All of these groups require statistical raw materials and highly processed statistics.

Secondly, private business and the general public in turn, with identical interests in being informed about what is happening, tend to reinforce the urgent demands of the Government to have an improved picture of the peacetime operation of the economy. Official statistics are used to portray the relationship of company to industry, of industries to one another and to the national economy. A sound factual basis for policy decision is regarded as indispensable by a rapidly increasing number of private companies which make extensive use of the services of the Bureau.

Thirdly, there has been a considerable development of social security measures in Canada since 1939. Unemployment insurance and family allowances are the outstanding instances. A full-fledged Department of National Health and Welfare has emerged to consolidate the activities of the Government in this field and with expanded needs for our services. Along with this, our vital statistics and other demographic data have become basic sources of day-to-day information interlocked with administrative needs at numerous points. These developments alone account for more than a quarter of the Bureau's increase in staff since 1939.

Fourth, negotiations between the Dominion Government and the government of the provinces on taxation and other federal problems have necessitated more comprehensive statistics on a regional basis. The population of Canada is largely distributed in an area several thousand miles in length but only a few hundred in width. Geography and natural resources divide the country into at least five well-defined economic areas. Within these are regional and local governments as represented by nine provinces and hundreds of municipalities. The problems of Canadian unity within our federal system require of official statistics a clear picture of the regional boundary in each case, its demographic factors, its production, its transportation, its trade, its income, its labor force, and its financial structure.

Fifth, the United Nations organization will require, as we all know, very comprehensive statistics from member countries. Papers presented elsewhere at these conferences deal with these developments in detail and it is not necessary to enumerate them here.

Sixth, there has been a tendency in recent years for the Government to establish a definite relationship between its policies in certain fields and the fluctuation of related statistical series. During the war, government policy allowed readjustments in wage rates according to fluctuations in the cost-of-living index. Another example is found in the contractual agreements in taxation between the Dominion Government and several of the provinces under which the latter are to receive an annual compensation which is to fluctuate with the level of gross national product as estimated by the Dominion Bureau of Statistics. This kind of development brings to the statistician a new responsibility for painstaking care and consistency in the fields of work involved. Sometimes these responsibilities can only be fulfilled with an expansion of technical and other staff assigned to the projects.

In the face of these and other developments, administrative action has been taken to create new services in some instances, together with expanded and improved services in others. Some of these deserves special mention.

A Central Research and Development Division has been set up and staffed by well-trained economists. Its function is to fill gaps in our series of economic statistics and to advise on the improvement of existing series. Many new economic series have been initiated, a recent example being a new set of inventory and shipment statistics.

One of the basic reasons for starting this new division was the need for a complete reorganization of the national accounts. The estimation of national income and related national accounts is now a subject of intensive specialization. In recent years there has been increasing realization that a set of account for the whole economy can be a most important tool in the development of economic policy. National accounts have been designed in Canada from the beginning to obtain a maximum of comparability with similar statistics in other countries. As early as September 1944, meetings were held in Washington with representatives of the United Kingdom and the United States as well as Canada, where agreements were reached on a number of basic issues. Since then, similar contacts have been effected with technical representatives of other countries. It is our hope that continuous liaison may be established between all countries interested in this subject towards the achievement of international standards of procedure.

National accounts in Canada have been designed to yield estimates of the more important aggregate income figures, such as net national income at factor cost, gross national product, gross national expenditure at market prices and personal income payments, together with the components of these totals. In addition, it is hoped before long to publish tables by sectors of the Canadian economy to portray the current transactions of households, business, agriculture, and government, together with the related tabulation of transaction on international account. This method of presentation of income and expenditure data will shed new light on fundamental economic relationships and provide estimates of the actual magnitudes involved in income flows.

References have been made in successive budget speeches to the desirability of presenting the Government's financial budget within the framework of an integrated system of national accounts. Various government departments interested in the analysis of policy and administrative problems are making use of the national accounts as a framework for the study of a broad range of problems. Mention has been made of taxation agreements between the Dominion Government and the governments of the provinces based on these statistics. National income statistics have been given prominence in various world organizations as a useful means of establishing the level of financial contribution of various countries involved. Private scholars and research workers in business and in the universities have followed the development of national accounts in Canada with detailed interest. Statistical data from all branches of the Bureau and many departments of the Government are used in the national accounts from a critical point of view to insure a maximum of consistency of the over-all results. Improvements are undertaken step by step as rapidly as possible. Even so, it will take a long time, perhaps a number of years, before we have completely developed the potentialities inherent in Canadian statistics for the presentation of the most useful possible system of interrelated national accounts.

A sampling organization has been set up in the Bureau. Since November 1945, it has been following changes in the labor force and its components by the quarterly enumeration of a one percent sample of the Dominion. The possibility of major maladjustments in the supply of manpower has made some such technique for conducting current population inquiries essential. The system of collection works outward from the sampling unit in Ottawa through five regional offices to 100 sample places in the Dominion in which 25,000 households are enumerated.

Although the main inquiries of the sample survey of the Dominion Bureau of Statistics refer to the labor force characteristics of the population, it has been found to be both efficient and economical to conduct supplementary surveys in addition. Statistics relating to multiple occupancy of dwelling units, farm characteristics, individual holdings of mortgages, food consumption, the occurrence of fires and accidents on farms, household facilities such as heating equipment, telephones, and radios, have been collected along with the standard labor force information. In general, the sampling organization provides an effective instrument for providing current statistics on a wide range of population characteristics both quickly and cheaply. It is expected, moreover, that in the future, increasing use will be made of area sampling methods in the collection of statistics relating to agriculture, consumer purchases, morbidity rates, family composition, and other matters of significant importance.

One interesting use of the sampling organization was a check on the work done by census enumerators in the quinquennial census of the prairie provinces. The results of this survey emphasize the importance of questionnaire construction and the wording of questions. It was clearly demonstrated that labor force status classifications are strongly influenced by the method of questioning. In particular, questions which are not designed to obtain a complete description of the status or activity of individuals in a specified period lead to an understatement of the number engaged in part-time work. Relatively small differences were observed in reports on the standard personal characteristics, although for one person out of four different statements of age were obtained by the two enumerators. However, there was a startling variability of response to questions which rely heavily on the respondents' memory. This was particularly noticeable in such questions as the one relating to the number of weeks of work in the previous year, where the reporting error was very high.

The existence of some variability of response is to be expected. Nevertheless, it is clear that a substantial part of reporting error is attributable to the inadequate training of enumerators. The survey therefore emphasizes the need for a well-planned program of training of enumerators. The results of this survey and others of the same type indicate that sampling variability, even with a small sample, is in many cases small in relation to enumerative error. This demonstrates the advantages of extending the use of sampling methods, even in conjunction with a complete census, particularly when it is required to obtain statistical information which is not both simple and objective.

The Vital Statistics Division of the Bureau has initiated a system of record linkage. The foundation of this linkage is the registration of births, stillbirths, marriages, and deaths filed in the several provincial offices of vital statistics under whose jurisdiction these records fall. The institution of this system of record linkage was ratified by Dominion-Provincial agreement and it arose out of the necessity of verifying the facts of births of each child eligible for benefit under the Family Allowances Act which came into effect on July 1, 1945.

The key to the system is a birth index and the assignment to each child born and registered in Canada and to all immigrants of a unique "birth identity number," made up of the year of birth, province of birth, and the number appearing on the birth registration or immigration record. Copies of all provincial registrations are transmitted on microfilm to the Dominion Bureau of Statistics and from them punch cards are prepared, showing the name, place of birth and other pertinent facts. These cards are then machine listed, first in birth number sequence to form a numerical index against which other records can be linked through cross-references posted against each number, and secondly in alphabetical sequence of the name for searching purpose.

All births occurring in the country (and all immigrants entering) since 1925 have been indexed to date, and we are now in the process of linking vital and other records to the basic births index. The custody of the index is under the Vital Statistics Council for Canada, composed of the Registrars-General of the provinces, the Dominion Statistician, the Director of Vital Statistics, and the Director of the Census.

Labor statistics offer an excellent example of a field upon which wartime changes have left a permanent imprint. A tremendous expansion in industry was achieved with manpower, wages, and prices all closely controlled. Two years after the war's end, wage control is a thing of the past and price controls are all but gone. Industry, reconverted to a peacetime basis, is maintaining employment levels close to wartime peaks, and far above the highest prewar figures. Demand for labor statistics has been affected not only by the greater importance of labor in the national economy, and the correspondingly greater need for information at the government policy-making level; it reflects a changing attitude towards the use of statistics. As an example, the compulsory wartime use of cost-of-living "yardsticks" apparently left a lasting impression upon both management and labor, as to the usefulness of these measurements in minimizing controversy regarding wage negotiations. Cost-of-living index numbers continue to be used on a scale unknown before the war in the renegotiation of wage contracts.

The Bureau has recognized the changing status of labor by coordinating its branches concerned mainly with labor statistics within the the framework of a Labor and Price Division. This unit includes a research section which operates in close liaison with the Central Research and Development Division. It is working upon problems of the qualitative improvement in established series, as well as the development of new records.

The first concern of the new division is to provide an organizational basis for establishing the greatest possible uniformity of industrial and occupational concepts and classifications. It will pay particular attention to the publication of labor statistics in conveniently consolidated form, providing historical background and interpretative data outlining limitations and legitimate uses.

Monthly figures on the sales of retail establishments of all kinds are important data to a host of users. In the past these have been gathered on the basis of a sample which included large, continuing, responding stores only. Now it is proposed to use all sizes of stores, selecting them in general with probability proportional to 1941 sales. For new stores, which have been a source of difficulty in the past, the scheme is now to obtain an area sample through the facilities of the Sampling Unit. For non-respondents, which before were considered as identical with respondents, plans are under way to enumerate a sample in the field, also through the facilities of the Sampling Unit. Improvements in the survey of retail sales will be followed by corresponding improvements in the field of wholesale sales and of inventories at wholesale and retail.

Developments in the Population Census include the sampling for preliminary estimates. An extended program of annual population estimates by the use of vital statistics and other ancillary data, tied into quarterly sampling, will more effectively bridge the intercensal gap.

The Bureau has for many years carried out a comprehensive annual census of Canadian industry and this work is now consolidated in a Census of Industry Division. Data on production, materials used, employment, and payrolls have been obtained from this source. In very recent years a large amount of information has been collected monthly on production and stocks of commodities. This has been in response to the recent trends enumerated at the beginning. To save time and money in the Bureau, and to save trouble and expense to large sectors of business, experiments are now being carried on to put the Census of Industry partly on a sampling basis. This will proceed as quickly as we are satisfied that accurate results can be obtained.

These are examples of the increasing scope of the Bureau which has necessitated basic organizational changes. Formerly, the thirty or so branches of the Bureau, each charged with the collection of material on some subject matter such as education, prices, crime, etc., were organized as separate entities under the Dominion Statistician. Even with the smaller size and scope of the prewar Bureau some lack of articulation was evident.

Most of these branches are now consolidated into Divisions, which constitute the major segments of the Bureau's activity. Officers in charge of these divisions are intermediate in authority between the branch chiefs and the Dominion Statistician. This change has effectively streamlined the organization; it has broken down barriers and brought related fields together. To handle the increased responsibilities of the Bureau, its executive and technical officers have had to be increased in number. A chief administrative officer, and a chief economist, respectively deal with staff and technical work throughout the organization.

With the increase in the assignments which are falling to the responsibility of the Bureau, changes in the mechanical facilities are inevitable. It is intended to centralize all compilation under a director of mechanical tabulation. There will be two basic methods, using respectively punch cards and peg boards or summary strips. Punch cards will be used only in those cases where an appreciable number of cross tabulations is required. The summary strip method speeds the work, reduces errors, and saves money, because information is compiled from original figures which are carried through to final results without copying.

With mechanized and centralized tabulation it will be possible to free executive personnel for executive work. With a central pool of machinery we will not only be able to plan individual jobs more effectively, but it will be possible to schedule jobs and so produce results faster. The promptness in the release of results for which we are so pressed can be attained by putting a large group of people on each task as it arises, which no single branch could do without having idle personnel between rush periods. In recent years great advances have occurred in the design of machinery. The closer we get to the push-button census, the more time and skill can be released from routine work which has often absorbed even the highest officers, and the more attention can be given to the needs of users, the formulation of questions that will meet those needs, and the interpretation of results.

In Canada the Government has been active in preventing the duplication of statistical facilities. Some decentralized activity did arise during the war when quite extraordinary requirements were faced by administrators; but now there is general insistence that the wartime series be examined to see whether they shall be discontinued. In this way the compilations of the Wartime Prices and Trade Board, the Department of Munitions and Supply and other wartime agencies are not being lost; that part of them which is of permanent usefulness is in most cases already being carried on by the Bureau.

Résumé

Depuis 1939, le Bureau de statistique du Dominion a été agrandi et réorganisé de façon à pouvoir satisfaire aux demandes de plus en plus nombreuses de renseignements statistiques qui lui sont adressées par le gouvernement, par les firmes commerciales et par le public en général.

Une nouvelle Division centrale de recherche et de perfectionnement a été créée au sein du Bureau. Elle a pour tâche d'améliorer les séries actuelles de statistiques économiques et de mettre au point de nouvelles séries. Elle porte un intérêt particulier à la réorganisation de la comptabilité nationale qui a été conçue de façon à fournir désormais des estimations, comparables sur le plan international, des principaux chiffres globaux de revenus et de leurs composants.

On a créé, en 1945, un organisme chargé d'effectuer des sondages. Cet organisme dispose de cinq bureaux régionaux et de 100 bureaux

locaux dans le Dominion pour procéder au dépouillement trimestriel des résultats d'un sondage portant sur 1 pour 100 du chiffre de la population. Ce sondage a principalement pour objet de déterminer les caractéristiques de la population active; des enquêtes supplémentaires portent sur le nombre de logements occupés, les caractéristiques agricoles, la consommation des aliments et coetera. Cet organisme a été également appelé à controler l'activité des recenseurs.

La Division des statistiques démographique du Bureau a mis au point un système destiné à assurer la coordination des données statistiques en partant des déclarations de naissances, de mariages et de décès centralisées par les bureaux provinciaux des statistiques démographiques. Ce système est fondé sur un tableau des naissances et sur l'attribution "d'un numéro d'identité à la naissance" à chaque enfant né au Canada et inscrit dans les registres de l'état civil de ce pays, ainsi qu'à tous les émigrants qui sont entrés au Canada depuis 1925.

Toutes les agences du Bureau qui s'occupent essentiellement des statistiques relatives au travail ont été coordonnées au sein d'une division du travail et des prix qui comprend une section de recherche travaillant en liaison étroite avec la Division centrale de recherche et de perfectionnement.

La plupart des quelque trente agences du Bureau ont été intégrées dans des divisions placées sous la direction de fonctionnaires dont le rang se situe entre celui de directeur d'agence et celui de statisticien du Dominion, ce qui a eu pour résultat de donner plus de souplesse au fonctionnement du Bureau. On se propose en outre de centraliser toutes les opérations de compilation sous un directeur de la tabulation mécanique en recourant à deux méthodes fondamentales: cartes perforées et fiches sommaires.

Afin d'éviter tout double emploi entre les services gouvernementaux de statistique dont la création est due en partie aux besoins extraordinaires du temps de guerre, on envisage de procéder à l'examen des statistiques recueillies par diverses organisations du temps de guerre, en vue de déterminer si le Bureau doit cesser, ou continuer de les tenir à jour.

L'INSTITUT NATIONAL DE STATISTIQUE DE BELGIQUE, SES ATTRIBUTIONS, SON ORGANISATION, SES TRAVAUX

par A. Dufrasne

Directeur Général de l'Institut National de Statistique (Belgique)

L'Institut National de Statistique est l'héritier direct de l'ancienne administration de la statistique générale devenue de 1932 à 1945, Office Central de Statistique. De ce fait, il constitue une des plus anciennes administrations du pays. C'est, en effet, par arrêté du gouvernement provisoire, en date du 24 février 1831, que fut créé un bureau de Statistique générale auprès du Départment de l'Intérieur.

La direction en fut provisoirement confiée à Monsieur Edouard Smits, ancien Référendaire près du Ministère de l'Intérieur sous le régime hollandais et Secrétaire de la Commission de Statistique du Royaume des Pays-Bas.

Ce bureau avait spécialement pour objet de constater tous les faits statistiques dont la connaissance importe à l'Administration en général et au progrès des sciences, en particulier.

Il devait publier au moins tous les six mois, un relevé de ses travaux et reviser s'il y avait lieu, les publications déjà faites par l'ancienne commission de statistique des Pays-Bas.

Le Gouvernement provisoire avait donc créé un véritable service central de renseignements statistiques ayant pour mission de coordonner et, éventuellement, de publier toutes les données chiffrées qui se trouvaient éparpillées dans les dossiers des diverses administrations.

Les moyens financiers mis à la disposition du bureau de statistique étaient peu importants de sorte que aussi la statistique officielle belge doit beaucoup à son premier directeur Smits qui, puissamment aidé par Adolphe Quetelet, à pu en dépit de circonstances défavorables, maintenir l'existence de son bureau et assurer de multiples publications.

Smits démissionna en 1841, il eut pour successeur Xav. Henschling C'est une année importante dans l'histoire de la statistique belge, car elle vit l'entrée de Quetelet sur la scène de la statistique officielle.

En 1841 il fut institué une "Commission Centrale de Statistique" dans laquelle chaque département était représenté par un ou plusieurs délégués.

Le but de cette commission est décrit comme suit dans le rapport au Roi, introductif de l'arrêté d'institution.

"Faire converger vers un centre commun tous les renseignement épars que recueillent aujourd'hui les diverses administrations;

"Signaler les lacunes et les détails superflus des publications actuelles;

"Proposer les modèles des états et des tableaux destinés à recueillir et à classer les éléments de ces publications;

"Veiller à ce que tout double emploi soit évité dans les demandes de renseignements et dans les publications ellesmêmes".

Quetelet, qui fut désigné comme président de la Commission Centrale de Statistique le demeura jus qu'à sa mort, le 17 février 1847. Hensckling, devenu le chef du Bureau de Statistique Générale, en fut le Secrétaire jusqu'en 1870.

L'institution de la Commission Centrale de Statistique marque le début d'une période de grand essor de la statistique belge. Les premiers efforts se concentrèrent surtout sur la préparation su recensement de la population, de l'agriculture et de l'industrie qui eut lieu le 15 octobre 1846.

Quetelet mourut en 1874; avec lui s'obscurcit la renommée du service de la statistique générale et de la Commission Centrale de Statistique. A ce déclin, l'on peut trouver deux causes; d'une part, Quetelet ne fit pas école; d'autre part, aucun statisticien belge ne voulut reprendre immédiatement le flambeau après la disposition de notre illustre compatriote tant il se serait senti inférieur au prestige de ce dernier. Et puis, il faut aussi le dire: peu d'encouragement de la part de l'autorite supérieure—les besoins immédiats en statistique se faisant peu sentir à cause de la situation économique brillante dans laquelle évolua notre pays jusqu'en 1914.

Au fur et à mesure que se développaient les missions dévolues à l'Etat, de nouveaux Ministères virent le jour et s'empressèrent d'organiser des bureaux de statistique de sorte que le service de la Statistique Générale fut démantelé pour ne plus conserver dans ses attributions que les recensements décennaux de la population et les statistiques démographiques.

Les véritables efforts en vue de la coordination et de la rénovation des services de statistique entrepris après la guerre 1914-1918 aboutirent finalement à l'Arrêté Royal du 11 août 1939.

L'article premier de cet Arrêté portant centralisation des services de statistiques stipule:

Que l'Institut National de Statistique est seul chargé:

"1. d'exécuter les grands dénombrements périodiques et enquêtes et d'établir toutes les statistiques de l'E'tat, à l'exclusion des enquêtes et relevés de renseignements faisant partie de la pratique administrative à laquelle ils sont inséparablement liés par leur but spécial limité aux exigences directes du service intéressé;

"2. de centraliser la publication de tous les renseignements statistiques;

"3. d'étudier au point de vue scientifique et au point de vue technique les statistiques dont l'élaboration ne lui est pas confiée conformément à l'exception prévue au 1."

Au point de vue administratif, l'Institut National de Statistique est seul chargé, en principe, de l'élaboration de toutes les statistiques de l'Etat. Cette mesure, comporte cependant une exception. Dans certains cas, la statistique ne découle pas d'opérations indépendantes du travail administratif courant, elle constitue, si l'on peut dire, un résidu de ce travail; il ne s'agit donc pas, dans un but de centralisation des services de statistique, d'empêcher les administrations de faire ces relevés de chiffres ce qui d'ailleurs eut été irationael et de créer de nouveaux doubles emplois en chargeant l'Institut National de leur élaboration.

L'Institut National de Statistique comprend, à côté des services généraux, un service d'études, un service d'exécution et un bureau de renseignements. Le service d'études prépare les enquêtes statistiques et en assure la publication; le service d'exécution est chargé des dépouillements. Quant au bureau de renseignements, c'est lui qui a la charge de fournir verbalement ou par écrit les données chiffrés que l'on demande.

Vous savez d'ailleurs que l'Institut National de Statistique, à côté d'ouvrages occasionnels, publie régulièrement trois espèces de documents; l'Annuaire statistique de la Belgique et du Congo Belge; le Bulletin Mensuel de Statistique; un communiqué hebdomadaire; ces trois publications publient les statistiques élaborées par l'Institut National de Statistique; et celles établies par tous les services de l'Etat. Il compte reprendre, sous peu, le bulletin mensuel du commerce extérieur de l'Union Economique Belgo-Luxembourgeoise avec l'Etranger.

Le service d'étude comprend des sections spécialisées dirigées par des universitaires recruités après un examen très sévere subi devant le Secrétariat Permanent au Recrutement. Le service d'exécution fait la critique des documents, en assure la modification et par les procédés mécanographiques de plus en plus perfectionnés, en fait le dépouillement

A ce point de vue, je crois utile d'ouvrir une parenthèse. Il n'est pas possible de confondre le travail de l'Institut National de Statistique avec celui de tout autre organisme s'occupant de travaux mécanographiques.

En effet, tandis que ces derniers ont à leur disposition des documents initiaux bien remplis, par des personnes sur lesquelles ils peuvent exercer une action, l'Institut National de Statistique doit travailler à l'aide de renseignements donnés par des gens sur lesquels il n'a guère d'autorité. Le travail de critique des documents doit donc être fait avec toute l'ampleur désirable. C'est une tâche fort longue, exigeant beaucoup de conscience professionelle sans laquelle toute statistique officielle perdrait sa valeur.

J'aurai terminé de vous parler de cette organisation, en vous signalant que l'Institut National de Statistique a été transféré en janvier 1940 du département de l'Intérieur à celui des Affaires Economiques et que son organisme consultatif—le Conseil Supérieur de Statistique continue les attributions de l'ancienne Commission Centrale de Statistique de 1841, complétées par des nouvelles dispositions législatives et règlementaires qui obligent toutes les administrations tant l'Institut National de Statistique que tout autre à le consulter pour toute statistique nouvelle et pour toute modification aux statistiques existantes.

Après un aperçu de l'organisation du service, quelques mots sur les activités principales de cet Institut. Il se peut qu'au cours de cet exposé, je sois amené à rappeler certaines situations anciennes. Il n'y a dans mon esprit, croyez-moi bien aucune espèce de critique à l'égard de certains de mes prédécesseurs, sachant bien par expérience personnelle, quelles sont les difficultés qu'ils eurent à vaincre.

Au point de vue de leur fondement juridique, les statistiques officielles peuvent se partager en deux catégories:

1. Celles qui résultent de l'application de mesures légales ou administratives: telles sont les statistiques du mouvement de l'état civil, les statistiques douanières;

2. celles, qui sont élaborées en vertu des lois spéciales concernant la statistique: les recensements généraux de la population, de l'industrie et du commerce; les statistiques basées sur la loi statistique du 18 décembre 1936 donnant au Roi le pouvoir de procéder par l'intermédiaire de l'Institut National de Statistique, à l'élaboration de relevés sur la situation démographique, économique et sociale du pays.

Les statistiques démographiques ont toujours été l'objet de soins spéciaux des statisticiens. Depuis quelques années, elles ont acquis dans les pays qui comme le nôtre, sont menacés de dépopulation, une importance de plus en plus grande.

Nous pouvons dire, qu'au point de vue, des statistiques démographiques, la Belgique, n'a guère à envier aux autres pays; nos recensements sont parmi les plus exacts. Il est regrettable que les circonstances n'aient plus permis, de procéder à un recensement général de la population depuis 17 ans. Une enquête aussi coûteuse est périodiquement nécessaire parce que, quel que soit le soin que l'on met à la tenue des registres de population, des erreurs sont inévitables; un inventaire à un moment précis est donc indispensable pour ajuster les chiffres; puis, il y a certains éléments de grande importance au point de vue économique et social qui ne peuvent être connus qu'au moment des recensements, par exemple la répartition des habitants par âges, par état civil, par profession; par degré d'instruction, d'après les langues nationales parlées; la composition des familles et ménages la dispersion de la main-d'oeuvre la fécondité de la population et toutes les études sociologiques qui s'y rapportent.

Le Gouvernement vient de prendre la décision de principe, de procéder cette année au recensement général de la population, des maisons et des logements, de l'industrie et du commerce; en ce qui concerne la population, cette vaste opération constituera le 11è recensement effectué en Belgique depuis son indépendance.

Pourtant certains économistes et sociologues estiment que l'évolution économique et sociale actuelle est tellement rapide que la période des recensements devrait être ramenée à 5 ans. Si nous quittons le domaine de la démographie pour passer à celui de la production et de la distribution, nous devons d'abord parler des statistiques agricoles.

Celles-ci se sont largement développées au cours des dernières années. L'on effectue tous les ans deux recensements agricoles; le premier a lieu le 1er janvier; il concerne les emblavements d'hiver et le cheptel; le second, se fait le 15 mai; il relève la superficie de tous les emblavements et le cheptel lequel est ainsi observé à deux époques de l'année; la première fois, lorsqu'il est à son effectif minimum; la deuxième fois, lorsqu'il est à son effectif le plus élevé. Je n'ai pas besoin d'insister sur les difficultés que présentent dans notre pays les recensements agricoles; la Belgique est divisée en 2,670 communes et son sol cultivable est morcellé en plus de 5,000,000 de parcelles cadastrales; sur quelque 1,200,000 déclarants plus de 800,000 n'exploitent pas un hectare.

Ces recensements sont complétés par un recensement horticole et par un recensement préalable des terres cultivées qui se tient en mars. Enfin, des observateurs renseignent mensuellement l'Institut National de Statistique par l'intermédiaire des agronomes de l'Etat (1) de la situation des cultures pendant la période de croissance, au moyen de côtes; (2) de la production à l'hectare pendant la récolte. Ces renseignements son dépouillés par l'Institut National de Statistique qui procède à l'établissement des chiffres généraux et moyens pour l'ensemble du pays.

Les enquêtes annuelles sont complétées par les recensements généraux de l'agriculture qui s'effectuent suivant des normes internationales fixées par l'Institut International d'Agriculture de Rome aujourd'hui la F.A.O. Les recensements généraux de l'agriculture sont plus poussés que les relevés annuels parce que l'on y recense non seulement les emblavements et le cheptel, mais de nombreux autres renseignements tels que le personnel agricole, l'outillage agricole les engrais employés, les quantités de nourriture consommées pour le cheptel etc.

La F.A.O. recommandera d'effectuer le recensement général de l'agriculture en 1950, le dernier recensement général date de 1920.

Quant à l'industrie, nous citons deux sources d'informations: les recensements généraux de l'industrie qui s'exécutent en même temps que ceux de la population et les statistiques de la production.

Les recensements constitutent un inventaire sommaire de l'equipement industriel et artisanal du pays; de la répartition des établissements industriels et entreprises par genre d'industrie et par localité du personnel occupé; du régime juridique et de la puissance motrice installée.

Les statistiques de la production n'existant guère avant 1940 se développent depuis la libération suivant un plan qui comprend deux parties

1. les statistiques mensuelles, réduites donnant quelques chiffres relatifs au personnel employé ou l'occupation (nombre d'heures-ouvriers-travail) et à la production des principaux produits;
2. les statistiques mensuelles de la production, dont les formulaires, variant d'une industrie à l'autre, sont rédigés suivant un schéma uniformed comprenant les informations suivantes:
   - a) le personnel occupé à différentes époques de l'année.
   - b) la force motrice installée.
   - c) les moyens et capacité de production.
   - d) les matières premières, combustibles et énergie employés.
   - e) les produits fabriqués.
   - f) les produits vendus.

L'Institut est eu que pour la fin de cette année, toutes les branches d'industries seront touchées par cette statistique.

Dès que l'Institut disposera des éléments voulus grâce aux statistiques de la production, et notamment les coefficients de pondération appropriés—on procédera à l'établissement d'un indice officiel de la production.

Nous comptons d'autre part suivre l'orientation économique du pays par les demandes d'établissements classés, adressées aux "Députations permanentes" des conseils provinciaux.

L'Institut National de Statistique élabore en matière de statistique des transports les relevés ci-après:

a) la statistique de la navigation maritime internationale de l'Union Economique Belgo-Luxembourgeoise; ainsi que la décomposition du mouvement international des marchandises par moyen de transport.

b) la statistique des transports par voies d'eau intérieure entièrement comparable à celle des chemins de fer. Enfin, nous comptons entreprendre à bref délai en collaboration avec le Ministère des Finances, un inventaire permanent des véhicules automobiles payant la taxe de circulation existant dans le pays.

Les statistiques du commerce extérieur de l'Union Economique Belgo-Luxembourgeoise subiront à partir de l'entrée en vigueur du tarif commun de l'Union Economique Hollando-Belgo-Luxembourgeoise un changement prond en ce qui concerne la nomenclature des marchandises: la nomenclature dite de la convention de Bruxelles sera conservée afin d'assurer la comparabilité avec le passé et de maintenir la possibilité étudier le sens de notre trafic.

Les statistiques relatives au commerce intérieur concernent:

1. la structure de la distribution que l'on étudie à l'occasion des recensements du commerce—

2. les indices de vent.à la consommation que l'Institut National de Statistique établie à l'aide d'une enquête mensuelle, faîtes auprès de grands magasins, de magasins à succursales et de coopératives.

Aussi, l'Institut National de Statistique porte actuellement ses soins dans les domaines ci-après relatifs aux statistiques sociales.

a) les statistiques professionnelles seront mises à jour grâce au prochain recensement général de la population et à l'aide d'une classification professionnelle.

b) les statistiques de salaires et spécialement l'établissement d'un indice officiel des salaires. A ce sujet, les contacts sont établis avec le département du Travail et de la Prévoyance Sociale et les commissions paritaires interessées.

c) le recensement général de la population servira également de base à un relevé des maisons et logements et vraisemblablement à une enquête concernant les taudis.

d) L'Institut National de Statistique contribue à l'élaboration des statistiques mensuelles du chômage du Fonds provisoire de Soutien aux Chômeurs ainsi que diverses autres statistiques telles celles relatives aux maisons et bâtiments, aux grèves et lock-outs, aux frontaliers, aux accidents du travail et aux assurances, ces dernières devant àbref délai être développées.

Au point de vue des statistiques financières, il convient de mentionner spécialement les statistique des finances provinciales et communales et l'établissement des statistiques fiscales relatives à l'impôt foncier, aux déclarations à l'impôt sur le revenu et à l'impôt complémentaire personnel. Ces statistiques permettront au département des Finances de disposer des éléments nécessaires à l'étude de la politique fiscale, du revenu national par la méthode subjective etc.; les statistiques de la production permettront l'étude de la distribution des revenus d'après les professions et les charges familiales. Je citerai aussi rapidement les statistiques relatives au rendement des sociétés anonymes belges et congolaises, celles. qui concernent le rendement des industries, les émissions, l'indice boursier, les statistiques du tourisme qui, avec les statistiques du commerce extérieur, forment un élément important de la balance des comptes.

Enfin, l'Institut National de Statistique compte publier à partir de son prochain bulletin mensuel les éléments caractéristiques de l'économie des pays avec lesquels nous entretenons les relations les plus importantes; sa collaboration est d'ailleurs demandée pour la mise au point des statistiques coloniales; il compte pousser également l'application des méthodes mathématiques modernes à l'étude de nos statistiques et créer ainsi un service d'économétrie.

J'aurai terminé cet inventaire en vous signalant qu'une commission s'occupe de la coordination des statistiques belges, luxembourgeoises et néerlandaises utiles aux intérêts de l'Union.

Cet inventaire contient déjà un bilan important, mais cela ne constitue qu'un début.

Néanmoins, pour permettre à un tel organisme de se maintenir et de ce développer, il lui faut le concours du Gouvernement et des particuliers du monde des affaires.

Les particuliers aussi bien que l'Etat ont un intérêt à ce que les statistiques soient de plus précises et ceci dépend en grande partie d'eux; car quelque soit le soin que l'Institut National de Statistique met au contrôle et à la critique des documents qu'il reçoit, bien peu pourra être fait si la sincérité des déclarations reste en défaut.

En marge des travaux dont il est question ci-dessus, il convient de citer encore les projets ci-après.

1. *Les indices des prix.* L'indice des prix de détail est actuellement établi comme il l'était avant guerre.

La liste des produits devant entrer dans le calcul des prix de gros a été remise à jour. Sous peu un indice des prix de gros sera publié.

Il n'a pas encore été possible de reprendre la publication d'un indice du coût de la vie, parce que les coefficients de pondération intervenant dans cet indice qui résultent de l'enquête de 1921 ne sont plus conformes à la situation actuelle.

Une enquête budgétaire est actuellement en cours à titre d'essai.

Une enquête budgétaire plus générale sera exécutée lorsque les circonstances seront redevenues normales.

2. Il s'est crée en Belgique un Institut Universitaire d'études de l'opinion publique dénommé "INSOC".

L'Institut National de Statistique collabore activement avec cet Institut, tant dans la préparation des questionnaires que dans leur dépouillement.

3. L'Institut National de Statistique a mis sur pied une nouvelle nomenclature des industries basée sur la nomenclature recommandée par le Comité d'experts de la Société des Nations.

Il insiste vivement pour que les travaux de la Commission des Statistiques de l'O.N.U. relatifs à cet objet, soient activement poussés.

4. Nous signalons pour mémoire la Commission de Coordination des Statistiques de l'Union Economique Néerland-Belgo-Luxembour-

5. Enfin mentionnons que le Gouvernement belge a décidé de créer un Service de statistiques coloniales qui entrera en activité des le début de 1948.

Résumé

This Institute, being direct heir to the *Bureau de Statistiques*, created by the Government in 1831, is one of the oldest institutions of Belgium. The aim of the *Bureau de Statistiques* was to supply to the Government and scientific world statistical information of all kinds. The Bureau grew continuously in importance under the direction of Smits and Quetelet.

In 1841 a Central Committee on Statistics was established in which each Department of the Central Government was represented. Statistical research was greatly stimulated by this Committee. The first census of population, agriculture, and industry took place in 1846.

After Quetelet's death the activities of the *Bureau de Statistique* and the Central Committee declined until, as a result of a general reorganization in 1939, the *Institut National de Statistique* was created to centralize the collection and publication of all statistical information.

Apart from a weekly communication the *Institut National* publishes a Statistical Yearbook for Belgium and Belgian Congo and a Monthly Bulletin of Statistics.

A survey of the most important statistics published by the Institute shows that population statistics have always received the special attention of Belgian statisticians: since 1840 there have been 11 censuses of population.

Agricultural statistics developed greatly during the last years. Censuses of agricultural production and livestock are now conducted each year.

International trade statistics are at the present time subject to a reorganization due to the Benelux customs union. In 1945 the *Institut National* started publishing monthly production and transport statistics, while also placing increasing stress on social and financial statistics.

RECENT DEVELOPMENTS IN STATISTICAL ACTIVITIES OF NATIONAL GOVERNMENTS

PART II

Thursday, September 11, at 9:30 a.m.

CHAIRMAN :

P. C. Mahalanobis

Member from India and Vice-Chairman, Statistical Commission of the Economic and Social Council

The CHAIRMAN introduced in turn additional representatives of the statistical services of national governments, who presented, in oral or written reports, recent developments in the statistical activities of their respective countries. Reports were given at this meeting by representatives from Turkey, Norway, Czechoslovakia, France, Denmark, the Netherlands, China, Lebanon and India, as follows:

EVOLUTION RECENTE DES TRAVAUX STATISTIQUES EN TURQUIE

par Sefik Inan

Conseiller a la Direction général des statistiques (Turquie)

Avec votre permisson, j'aimerais donner une portée plus large à l'expression "travaux récents" et remonter un peu vers le passé. Cependant, la période dont je vais vous parler n'englobe que les vingt dernières années, et vous conviendrez que, dans la vie des nations, une période de vingt ans ne peut être considérée comme bien longue. C'est pourquoi, à mon sens, les travaux accomplis au cours de cette période peuvent bien être considérés comme des "travaux récents."

A la suite de la première guerre mondiale, l'Empire Ottoman, s'étant écroulé, l'élément turc qui avait bâti et fait vivre pendant des siècles ce vaste et puissant Etat, a édifié sur les ruines de ce dernier, dans ses frontières actuelles et nationales, la République Turque. Dès ses premiers jours, la République a commencé à fonder des institution nouvelles, à adapter celles qui existaient déjà aux besoins nouveaux que l'Empire Ottoman, au cours des derniers siècles de son existence n'avait pas eu

le temps, par suite des difficultés extérieures et intérieures qui se succédaient constamment, à prendre en considération.

Dans cet ordre d'idées, parmi les préoccupations des dirigeants figurait la création d'un service de statistique. C'est ainsi qu'en 1926, une loi a créé le Bureau Central de Statistique attaché à la présidence du Conseil. La direction de ce bureau fut confiée à feu M. Camille Jacquart, éminent statisticien belge, membre de l'Institut International de Statistique, dont le savoir et la compétence sont connus par un grand nombre d'entre vous. Je considère de mon devoir de rendre hommage à sa mémoire et d'exprimer ici les reconnaissances de mon pays pour ses services précieux.

La première tâche assignée au Bureau par le gouvernement était la préparation et l'exécution d'un recensement général. Le Bureau, en 1927, procèda à un recensement général de la population et à titre d'essai à un recensement industriel et agricole. Les résultats de ces recensements suscitèrent dans le public un vif intérêt à l'égard des statistiques.

Le Bureau Central de Statistique, tout en continuant sa propre besogne, fut chargé d'autre part d'assurer la coordination de différents services de Statistique qui figuraient dans l'organisation de différents ministères. Malheureusement, la réalisation de cette coordination ne fut pas possible, parce que les ministères considéraient les besognes de leurs services de statistique comme quelque chose de secondaire, d'étranger à leur activité. Aussi négligeaient-ils ces services qui étaient souvent confiés à des fonctionnaires qui manquaient de connaissances en matière de statistique. Lors de changements dans le personnel dirigeant des services, les méthodes changeaient également. D'autre part, par suite de l'état d'esprit dont faisaient preuve les différents ministères à l'égard de leurs services statistiques, les cadres de ces derniers n'étaient jamais complets et étaient souvent utilisés pour effectuer des travaux dans d'autres services.

Cet état de choses faisait ressortir la nécessité d'un service spécial dont la statistique serait l'unique préoccupation. Cet objetif ne pouvait être atteint que grâce à l'institution d'un système centralisé. Ainsi, en 1933, une Direction générale de Statistique rattachée à la Présidence du Conseil, fut créée. Tous les services de statistique de différents ministères, excepté ceux du Ministère de la Santé et du Ministère des Communications furent incorporés dans le cadre de la Direction générale de Statistique. Aujourd'hui, en Turquie, la Direction générale de Statistique possède le monopole légal de l'établissement et de la publication des statistique officielles.

En 1933, date à laquelle la Direction générale de Statistique a été créée, les renseignements statistiques dont on disposait concernant les différentes branches d'activité de l'Etat, n'étaient pas le fruit d'une technique saine, manquaient de continuité et d'homogénité et souvent n'étaient pas publiés.

A partir de cette date, l'activité de la Direction générale de Statistique peut être résumée comme suit:

1. La Direction générale de Statistique a préparé et exécuté quatre recensements généraux de population: à savoir, ceux de 1927, 1935, 1940, 1945.

Les résultats des recensements de 1927 et 1935 sont publiés. Les résultats du recensement général de population de 1935 ont été classifiés d'une manière particulièrement détailée. Les résultats du recensement de 1940 n'ont pu être classifiés en détail, par suite de l'impossibilité de se procurer des cartes à perforer indispensables. Celui de 1945 est en train d'être classifié. Nous espérons achever le travail de classification au début de l'année 1949.

En ce qui concerne l'évolution naturelle de la population (morts, mariages, divorces, etc.) la Direction générale de Statistique se contente d'établir des statistiques concernant uniquement la population urbaine. Il ne nous est pas possible de suivre le mouvement de la population pour le pays tout entier.

2. Nos statistiques du commerce extérieur sont établies et publiées régulièrement. Un projet de loi est en préparation qui permettra d'adopter "la nomenclature internationale" comme base tarif douanier. Si ce projet se réalise, nos statistiques du commerce extérieur seront améliorées du point de vue de la comparabilité internationale. Pour le moment, nous nous contentons d'établir des statistiques du commerce spécial. Nous espérons, en faire autant pour le commerce général dans le proche avenir.

3. Nos statistiques agricoles, à l'instar de celles des autres pays, ne sont que des estimations. Depuis 1927, nous n'avons pu réaliser un recensement agricole. Nou avons l'intention de prendre part au recensement agricole mondial de 1950, et nous serons ainsi à même de contrôler nos estimations précédentes.

4. Les statistiques des prix de détail établies depuis 1933 ont été élargies depuis 1939. Parallèlement aux prix de détail nous établissons des statistiques de prix de gros. En établissant des statistiques de volume et de valeur des marchandises négociées en Bourse, nous tâchons de suivre, au moins partiellement, les mouvements du commerce intérieur.

En se basant sur les données fournies par la Direction générale de Statistique, le Service de Conjoncture du Ministère du Commerce calcule régulièrement des indices du coût de la vie et des prix de gros.

Nous n'avons pas encore des statistiques de salaires et n'avons procédé jusqu'à maintenant dans ce domaine qu'à des enquêtes partielles. Néanmoins, l'observation continue du mouvement des salaires se trouve parmi nos premiers objectifs à atteindre.

5. Depuis 1933, nous procédons à l'élaboration de statistiques des condamnations et nous sommes en train de travailler au développement de ce genre de statistiques.

6. Dans le domaine de l'Industrie, de 1933 à 1941, nous avons pu établir des statistiques englobant uniquement les industries qui bénéficiaient de la "Loi pour l'encouragement de l'Industrie."

En 1941, cette loi étant abrogée, nous fûmes obligés de cesser l'élaboration de ces statistiques. D'autre part, depuis 1927, nous n'avons pu procéder à un recensement industriel. Nous espérons cependant en faire un dans les années qui viennent.

7. Nos statistiques de l'Instruction Publique sont très développées. L'établissement des statistiques de cet ordre se poursait sans difficultés et les résultats obtenus sont à fait satisfaisants, par suite du degré d'instruction des personnes auxquelles sont adressés nos questionnaires.

8. Quant aux statistiques des finances publiques, nous nous contentons, pour le moment, d'etablir des statistiques d'ordre général. Nous n'avons pas pu établir encore des statistiques de nature à éclaircir le fonctionnement du mécanisme interne des impôts. En ce moment, mon pays est en train de préparer une réforme fiscale d'envergure: un projet de loi ayant pour but d'introduire un impôt général sur le revenu est à l'étude par une commission spéciale de la Grande Assemblée Nationale Turque.

La Direction générale de Statistique a déjà fait les travaux préparaestoir nécessaires pour établir des statistiques des finances publiques de nature à déterminer la répartition de la charge fiscale qui résultera de l'entrée en vigueur de la loi sur la réforme fiscale.

9. La Direction générale de Statistique, utilisant les données statistiques disponibles, vient de calculer le revenu national du pays pour les années 1942, 1943, 1944. Elle compte continuer ce travail pour les années ultérieures.

10. Peu avant le recensement général de population de 1945, la Direction générale de Statistique a procédé a une "Enquête rurale," destinée à étudier les aspects morphologiques, sociologiques, et économiques, des villages de notre pays. Les résultats de cette enquête sont actuellement sous presse.

11. La Direction générale de Statistique a fait en 1933, 1938, 1941, 1946, des recensements des fonctionnaires. Ceux de 1933 et de 1941 ont été très sommaires, tandis que ceux de 1938 et de 1946 sont fort détaillés et de nature à éclairer le problème du fonctionnariat dans notre pays. Les résultats du recensement de 1946 sont sous presse.

12. A la Direction générale de Statistique tous les travaux de classification sont mécanisés. Nous utilisons pour nos travaux des machines *powers* et nous en sommes très satisfaits.

13. Nous attachons de l'importance en Turquie, à l'enseignement statistique:

A la Faculté de Droit de l'Université d'Ankara, à la Faculté des Sciences Economiques d'Istanbul, à l'Ecole Supérieure des Sciences Politiques et Economiques d'Ankara, à l'Ecole Supérieure du Commerce d'Istanbul, des cours de statistique sont professés. Dans tous les lycées commerciaux la statistique est également enseignée.

14. Les publications de la Direction générale de Statistique se divisent en deux groupes:

1) Statistiques officielles,
2) Etudes théoriques et pratiques.

Toutes ces publications sont distribuées gratuitement , ce qui a permis d'habituer le public a l'utilisation des statistiques.

Résumé

A General Directorate of Statistics, established in 1933 under the President of the Council, has charge of all the statistical services of the Government except those of the Ministries of Health and Communications. It has the legal monopoly in the compilation and publication of official statistics.

Four general population censuses were conducted in 1927, 1935, 1940, and 1945. Statistics of external trade are compiled and published regularly. No agricultural census has been taken since 1927, but Turkey hopes to participate in the world agricultural census of 1950. Cost of living and wholesale price indices are calculated by the Ministry of Commerce from data collected by the General Directorate of Statistics.

Industrial statistics are only available from 1933 to 1941 for those industries which benefited from the "Law for the Encouragement of Industries," which has since been abrogated. Statistics on public education are well developed and quite satisfactory. Preparatory work has been done on the compilation of statistics of public finance as soon as a proposed fiscal reform law comes into force.

The General Directorate of Statistics has calculated the national income for the years 1942, 1943, and 1944, and plans to continue this work for subsequent years. Results of a survey of public officials in 1946, in more detail than previous surveys, are ready for publication.

The publications of the General Directorate of Statistics, which are all for free distribution, include : (1) official publications of statistics, and (2) publications of theoretical and practical studies.

PLANNING ECONOMIC STATISTICS, WITH SPECIAL REFERENCE TO A NATIONAL SYSTEM OF ACCOUNTS

by Arne Skaug
Director, Central Bureau of Statistics (Norway)

In this series of talks on recent developments in official statistics in different countries, it is a great pleasure for me to relate some of the problems we have encountered in Norway in connection with getting the necessary data for the national accounting system we have adopted for our work.

I shall not be able to go into very much detail since the time at my disposal is short, and I am also afraid that what I have to say may not be exactly news to you. After all, the situation is probably the same in all countries in this particular field of economic statistics. I should think that all countries must be faced with the same problems which confront us if they try to develop their national income studies from primitive estimates into a system of social or national accounts.

I may perhaps start by saying that in Norway, we have always regarded our official statistics in the economic field as fairly well advanced. During the period of nearly 75 years since our Central Bureau of Statistics came into existence, there has been a steady tendency toward wider coverage in our statistics, and also toward greater accuracy. It has been typical of this development in our country, as I should think in most countries that it has not been entirely up to the statistician himself to decide what fields to concentrate on, and to develop at any given time. While a research organization may have a considerable degree of freedom in its choice of subject matters to investigate and problems to go into, an institution like our Central Bureau of Statistics is nevertheless a service organization for the Government, as well as for business and for the people of the country. The role of the Bureau as a service organization to the Government is a vital one, hence the choice of problems to be taken up at any given time will, to a large degree, depend upon the special needs of the Government for statistical information at that time. This has led to the result that at certain times some fields have received greater emphasis than others, as the most pressing needs always have to be met first. This again means that although plans can be laid for a balanced development in statistical work, it is far from possible always to execute these plans in practice. Some fields would be well advanced, while at the same time other fields would be far from being covered in a satisfactory way.

Against this type of development, we may study the problems which arise when one adopts a system of national accounts for national income studies and is faced with the problem of getting data for such a system of statistics. We, in Oslo, for a considerable time now have been working on a system of national accounts, and we have reached the point in our theoretical work at which we have decided on the accounts we are going to use. The basis for our work has been the still unpublished League of Nations report and recommendations on national income statistics, which in turn were built upon Mr. J. R. N. Stone's proposals for a national accounting system. In one respect, however, we are planning to go quite a bit further than the minimum proposals, in the League of Nations report. In those minimum proposals, it is not suggested that a detailed breakdown be given by branches of economic activity. The proposals only recommend such a breakdown of economic activity by two major groups, namely, business enterprises and house ownership. We intend to give a breakdown by branches of economic activity as follows: Agriculture; forestry; fishery; whaling; manufacturing industries; construction; shipping; other transport; commerce; hotels and restaurants; services. In addition to these groups, we shall also have the usual sectors for banking, other financial institutions, insurance—both private and social, individual consumers, local and central government, etc.

Of course this increase in the number of sectors of economic activity will increase the difficulties which are encountered when one sets out to supply figures for the system. The idea with this type of approach in the national income study is, as you are all aware, to make it possible to show not only the total national product and the total investment, but also to give a breakdown of national income and investment by branches of economic activity. For each sector, therefore, one has to operate with a capital account and a working account.

To construct a system of sectors and accounts this way is in itself no overwhelming task, although a number of complicated problems are involved. However, when that system is constructed, and one starts to try to fill in the figures, new and considerable difficulties certainly arise.

After having set up our system, we set out to try to measure to what degree our economic statistics as now developed could fulfill the requirements of the accounting system. As I mentioned earlier, we have always felt in Norway that we had a reasonably well developed system of economic statistics. Nevertheless, in relation to the requirements of our national accounting system, we had soon to admit that our economic statistics in almost all fields were not developed sufficiently, and did not meet the requirements of the national accounts system. Among other shortcomings, it was disclosed that we needed badly a new and comprehensive census of industrial establishments and a census of distribution, to get the basic economic data for a description of our economic life. Our last census of this kind was taken around ten years ago, and cannot be considered satisfactory any longer. We need to develop statistics on variations in inventory positions, in industry, commerce, and agriculture, both for primary products and finished goods. We need to develop increased and improved statistics on investments in all branches of economic activity. Our current monthly and annual statistics on production in agriculture and industry turn out not to be satisfactory for the purposes of the national accounts system. Also, our statistics on public finance turn out to be unsatisfactory from this point of view, especially because they do not give adequate data on investments. Taxation statistics are also important. Our system of national accounts requires information on taxes paid by branches of economic activity, information which we lack at present. These are just a few examples, and I might give many more. Before I leave this part, however, I should like to mention that our work in connection with the system of national accounts has shown to us very clearly the necessity for developing more data than we have at present on the details of cost and income relations in all branches of economic activity. Details of this type of work have, in our country, in the past been available for agriculture, based on detailed and exact reporting from a relatively small sample. In order to get the necessary information for the national accounts system we shall have to get the same kind of reporting established in other economic fields.

Based on an analysis of the kind I have sketched here, we are now in the process of building up a plan for the development of our statistics in the economic field so as to make our system of economic statistics satisfactory in the light of the statistical requirements of a system of national accounts. We have, in our country, a fairly centralized system for official statistics and our Central Bureau of Statistics is responsible for most of the statistics which are produced in the country. This, of course, gives us a great advantage and our hope is that we shall be able to build up a harmonious and balanced plan for the future work. I said at the beginning of this talk that our statistics until now have been developed very much according to what special needs were prevalent at any given time, and that this did not always give a balanced development. Today the need for reliable national income figures with breakdowns is one of the foremost statistical requirements of the Government, and such data are of primary importance to practical economic policy. This, therefore, is the natural starting point for our own planning work in the statistical field. Starting with the system of national accounts, we are trying to find how we have to develop our statistical work and to refine our methods in order to get the data which such a system requires. This, then, gives us in turn a plan for the development of the whole system of economic statistics.

I cannot say anything regarding the results which this work may yield, nor am I able to say whether we shall soon be able to follow through the plans which are being made. Therefore you may say that this whole approach is impractical and more or less a statistician's dream. However, it is a nice dream, and an attempt of this kind to develop the whole system of economic statistics in accordance with a common denominator we believe to be the best and most rational way for developing a balanced and harmonious system of statistics in this field.

Résumé

Le Bureau central de statistique est en train de mettre au point un système de comptabilité nationale inspiré du projet de rapport et des recommandations de la Société des Nations relatives aux statistiques du revenu national. Ces recommandations étaient elles-mêmes basées sur les propositions de M. J. R. N. Stone, tendant à l'établissement d'un système de comptabilité nationale.

La Norvège veut aller plus loin que les propositions minimum de ce rapport et fractionner de façon plus détaillée les diverses branches d'activité économique. Des difficultés considérables surgissent lorsqu'on essaie d'indiquer les chiffres que réclame ce système de comptabilité.

Un des points faibles révélé par les recherches poursuivies dans ce domaine est l'absence de recensements récents et détaillés portant sur les établissements industriels et les établissements de distribution. Le besoin se fait également sentir de statistiques sur les variations de l'état des stocks et sur les placements dans toutes les branches de l'activité économique. Les statistiques actuelles sur la production, les finances publiques et les impôts ne sont pas satisfaisantes ou ne sont pas suffisantes.

La Norvège possédant, pour l'établissement des statistiques officielles, un système relativement bien centralisé, le Bureau central a intérêt à ce que les statistiques économiques se développent de façon à répondre aux besoins d'un système de statistique de la comptabilité nationale. Ceci permettra d'entrevoir le développement ultérieur de l'ensemble des statistiques économiques.

INDUSTRIAL STATISTICS OF CZECHOSLOVAKIA: SCOPE AND METHOD

by Karel Malík

State Statistical Office (Czechoslovakia)

Substantial changes which have taken place in new Czechoslovakia, such as the nationalization of mines and big industries, planned production, and the Two-Year Economic Plan, have created an entirely new legal and organizational status for industrial activity. These changes naturally have had far-reaching effects on the development of industrial statistics. Before the war, Czechoslovakia's production statistics proper covered only certain sectors of industry (chiefly agriculture, power production, mining, and metallurgical industries). Apart from that, industry was statistically treated from time to time only by methods of the census type, of which the first general census of industrial establishments in 1930 may be mentioned especially. The first exhaustive statistical treatment of Czechoslovak industry can be traced as far back as 1934, when the first data were obtained in part even retrospectively for a number of years by means of a very detailed pattern, covering output, sales (quantity and value), raw materials, fuel and power consumption.

Now Czechoslovakia is engaged in two large-scale systematic investigations of industry. These are monthly statistics of manpower and personnel, purchases and sales, and a monthly (in some special cases a quarterly) investigation of production and consumption of basic raw materials. Preparations have been concluded for a third exhaustive investigation which will bear on the consumption of fuel and power by industry.

The achievement of monthly targets in industry and building trades is checked up by special current reports on the fulfillment of the Two-Year Plan. There is also prepared an index of industrial production. A number of other investigations, limited in scope either regionally or to certain industrial branches, have been carried out by different economic bodies and branches of administration connected with the directing and planning of industry. These investigations, partly of independent, partly of indirect character, are not compulsory. Considering the quality of their results and especially the incompleteness of the data, it is only natural that superintending authorities should seek to limit/or to coordinate them as far as possible.

From the point of view of method some general remarks may be of interest in respect of the various kinds of industrial statistics in operation now or to be put in operation within a short time.

STATISTICS OF EMPLOYMENT, PURCHASES AND SALES

The essential items covered here are: personnel, classified by categories and sex; home workers, if that be the case; hours worked (with detailed items considering the form of wages—piecework, time wages, or overtime), not-worked hours (paid for or not), wages and salaries paid (detailed), value of purchases (for production or for investment, from own or other undertakings, in the country or abroad), value of sales (detailed similarly). Statistical units are technical units according to a formal definition laid down in a classification of industries analogous to the groupings existing within the National Federation of Industries. The figures are investigated at monthly intervals, but quarterly investigations will be substituted probably in 1949, with the exception of total data on personnel, where monthly investigation will be retained. These statistics bear on the whole industry, nationalized or not; they do not, however, consider crafts and trades (small industries, commerce, transport), nor are undertakings not in actual operation taken into account. As a rule, data are collected only with reference to technical units of more than five persons, small undertakings with a minimum statistical variability being investigated in detail only occasionally. The detailed results of these statistics are regularly published separately for the nationalized and non-nationalized industries and, at times, regional results are marked, even by localities. Only the number of establishments, and persons engaged in work are as a rule considered; but data on the number of persons active in industrial production for certain particularly industrialized towns will shortly be published at regular intervals. Many reasons can be quoted in favor of a reform of this important department of industrial statistics. In the first place, it will be necessary to draft a new classification of industries, which must be homogeneous, systemmetrical, logically justified, and independent of the organizational pattern.

The importance of this department of industrial statistics can hardly be overrated; even from the standpoint of international comparison. One of its very valuable aspects is that it covers the whole of the industry and that it is methodically uniform. This quality of being general and exhaustive renders its results a source of information on many basic and fundamental issues of industry considered as an entity within the spheres of economics, social economics, and geography; on its extent, its horizontal and vertical structure, its organizational forms; on the structure and the dynamics of industrial employment; on the use made of working time; on the structure of wages; on the relations of the most important overhead charges. In short, it throws light on industry in all its aspects as a factor of the manpower market, as the main factor of a specific level of national revenue, and consequently also of the social level not only of the persons engaged in industrial work itself but of the whole of the nation. Besides, it enables us to study efficiently the interdependence of industry and the specific geographic conditions which give rise to it, and which are in turn influenced by it, and allows us to draw conclusions regarding the international level of the State.

STATISTICS OF INDUSTRIAL PRODUCTION

This complex of statistical investigation represented by dozens of industrial questionnaires covers the whole of industrial production, and is based on an item pattern which is on the whole uniform. The most important items are the output and consumption of basic raw materials in production, not the consumption of fuel and power, which latter is assigned to a special investigation. As far as production proper is concerned, the following items are investigated: output, sales and the items intermediate between output and sales, *viz.*, the stocks at the beginning and at the end of the investigated period. Production is exhaustively defined by a special list of products, based on the so-called list of "plan-groups" which classifies according to a specific methodical principle the whole of the industrial production. As far as consumption is concerned, the subjects of investigation are quantity, in some cases value, and exceptionally also stocks. As to the period of investigation, it is monthly in principle, but in the case of some sectors of industry, three months; raw material consumption is investigated quarterly.

Preliminary work on this investigation has been conducted collectively by numerous experts and by many branches of administrative and economic bodies headed by the State Statistical Office and the State Planning Office. As a rule, the economic groups are charged with the collection and treatment of the data; a few exceptions are made in favor of the State Statistical Office. The economic groups normally report monthly to the State Statistical Office the basic results obtained from the data. The State Statistical Office makes a final check for accuracy, treats the data statistically, and eventually publishes them.

INDUSTRIAL CONSUMPTION OF FUEL AND POWER

The statistics of industrial production mentioned above do not refer to the consumption of fuel and energy. New questionnaires have been prepared which will supplement the former, also retrospectively from January 1, 1947. Two parallel investigations will be conducted: one in less detail, quarterly; the other more elaborate, annually. The quarterly investigation will be restricted to a mere statement of quantity, by local units, of all kinds of fuel and power used, including electric current, gas, steam, heating water. The annual investigation will provide, for example within the subdivision of coal, a further classification of consumption according to its technical purpose (production of electric current, for driving machinery, for furnaces, etc.), while not only the quantity (weight) of coal consumed but also its caloric quality will be stated. Among other items investigated are stocks of fuel at the beginning and at the end of the year. Both investigations are intended to supply a survey of the economic aspects of industrial fuel and power consumption, from the standpoints of the consumption of raw materials and products generating energy, and of the problem how to economize rationally these materials. The consumption of water may be considered as an entirely new and very important item of such statistics; water being a primary economic and geographic factor, and typically indicative of the localization of industry. By ascertaining its consumption, and possibly even the purposes of its consumption, it will contribute largely towards a rounded-off survey of Czechoslovak industry.

CURRENT REPORTS ON THE TWO-YEAR PLAN

It need not be stressed that an efficient fulfillment of an economic plan makes it imperative to establish a systematic checking up of its progress which must never lag behind. Without such control the plan could never achieve its goals. The tasks of the control here consist not merely in supplying the central organs of planning with records on the progress of the fulfillment of the plan and in supplying information in a strictly democratic form to the public here and abroad, but also in much more practical matters. It indicates the exact point where there is need of additional measures, either because the plan originally failed to interpret exactly the material facts, or because the actual development had lagged behind the target set up by the plan. Moreover, its mere existence is a mighty psychological factor influencing systematically as a kind of public supervision the morale of the agents in charge of the fulfillment of the targets. Therefore, statistical control was provided from the very beginning of the operation of the Two-Year Plan. The foremost tasks of such control lie in the sphere of the Industrial Plan and its fulfillment, because there the need of control is most imperative. So-called basic tasks are the subject of investigation; these are the products for which the plan provides monthly production targets. The present statistical pattern contains about 140 items, divided into 15 groups; additional items are being prepared. In every other respect the statistical pattern is simple, the only information investigated being the target provided by the plan, the actual amount of production, and the resulting percentage of fulfillment. Besides, the State Statistical Office, in cooperation with the State Planning Office, calculates separate index numbers for the above-mentioned 15 groups as well as an aggregate index of the whole industry, weighted according to the number of persons engaged in the respective branches of production. A point of interest is the fact that owing to the high morale of the reporting agents—accounted for by nation-wide interest shown for the success of the Two-Year Plan—and, of course, also owing to the simplicity of the investigation, these statistics have attained literally one hundred per cent thoroughness of data, while all the strictly determined terms of delivery have been without any exception complied with on all the levels —a phenomenon which is certainly rarely met with elsewhere.

THE INDUSTRIAL PRODUCTION INDEX

Up to the second half of 1938, a Czechoslovak industrial production index was published by the university lecturer, Dr. Maiwald. The period of the index base was the average month of 1929, and, owing to the lack of direct production data, the index was constructed mainly by means of auxiliary series (the consumption of raw materials, exports and imports, railway transport, employment, etc.). At present the State Statistical Office, in cooperation with the State Planning Office, is engaged in the construction of a new index in a general situation essentially more favorable to the scheme, the sets of data on industrial production having substantially increased as compared with the prewar period. Since the reports on general statistics of industrial production are not yet coming in punctually, the results of the special current reports on the fulfillment of the Two-Year Plan have been chosen as the base of computation. Out of the said statistical reports 80 typical items were selected and formed into 12 basic groups. The relative weights of these groups are a determined arithmetic mean of several typical numerical series available. The weights assigned to individual products are the arithmetic mean of the proportional parts of the numbers of persons active in industry according to the 1930 census of establishments and the gross value of the production planned for 1947. The base period of the index will be 1937.

The index is a monthly one in principle, seasonal industries being represented by equal monthly quotas; the data are adjusted in keeping with the number of working days.

The index will be a national one, with partial indices calculated for the western provinces and for Slovakia. There will also be partial index numbers of the means of production and of consumption goods. This index pattern is provisional; as soon as the general statistics will have attained the required grade of accuracy and punctuality of returns, the index will be supplemented by additional products and some postwar year will be chosen as a new base period, either exclusive or parallel, so that the postwar structural changes will be allowed for (above all, the major shifting favoring the industry of the means of production).

RETROSPECTIVE REVIEW AND FUTURE PROSPECTS

It can hardly be disputed that statistics are increasingly becoming an inseparable part of the complex system of the State administration and of the organizational activities of many economic institutions, although, due to certain conservative habits, not to the same extent everywhere. This is apt to give rise to manifold encouraging as well as retarding reactions. One of the favorable consequences is the indisputable fact that the public can be much more easily approached for the purposes of statistical investigations and that the program of such investigation is steadily gaining ground and widening its scope. Among the unfavorable phenomena we may mention the fact that in drafting the programs of statistical investigations too many interests and institutions are represented and that the whole of statistics does not show a systematic growth. Czechoslovak industrial statistics, on which the public interest was centered after the liberation more than on any other department of statistics, corroborate these maxims. Industrial production statistics inaugurated in Czechoslovakia before the war, were on the whole the creation of the State Statistical Office, which always bore in mind its foremost quality of being a constituent part of a system of national and international statistical activities. This situation has changed since the end of the war. Postwar statistics which may be described as an industrial census, in the true sense of the word, have not yet been resumed. They have been largely replaced by vast partial statistics focussing their interest on some particular component of the observed phenomenon (such as employment, yield and cost of labor, technical production, power economy) and always distinguished by an acute sense for detailed observation of the evolution of such phenomena. There is no doubt that in many respects these pioneers of new tendencies in statistics bear upon their faces the seal of great deeds never yet accomplished in this department of statistics in Czechoslovakia. They reflect the great issues and the almost tragic responsibility of the authors of the plan. But are the social and economic facts such as to warrant the hitherto prevailing character of statistical activities within this sector? Are there still some gaps left in the field covered by recent investigations? What has to be done in order to set up a system perfect in form and substance, satisfying all needs and at the same time practicable for the public as well as for the State Administration? These are very grave questions, and of course we can give no final answer in these days, facing, as we are, a long development of legal and organizational bases of economic life in this country and of regulations of international political and economic relations.

There are, however, a number of aspects which we can realize even now. First of all, it is evident that the change of the surroundings within which the statistics of industrial production were formerly determined, is fundamental and final, because the nationalization of industry and its planning are permanent, and will even be intensified as far as quality characteristics are concerned. It is, however, no less evident that the statistical service has, to a large extent, become a real burden of production, so that spontaneous appeals are made to have it modified to a more economical and endurable form. It may be added, too, that in the future the pressure of the international institutions of the statistical service for supplementing the world's treasury of data will become more insistent. There has been ample evidence of this tendency recently. It will be no longer a mere question of collecting data for the solution of scientific problems; there will be a demand for data to serve as a basis for solving important international problems, whether referring to the relations of two states concluding an agreement, or to geopolitic wholes. And, what is especially important, it will be no mere demand for data, but a demand for the uniformity of methods of obtaining such data. Since a great deal of preliminary work has been done in the interests of international statistical information in some other fields of material statistics, the foremost task will now be in industrial production statistics, in respect of which so little has been done. We can add that this country is already playing a considerable part in this renascent statistical service, and that its contribution in the field of industrial statistics alone is considerable and almost equal to that of other typical industrial countries of much larger size.

Czechoslovak industrial statistics have aspired to the highest goals and, as evidenced by the results achieved, have succeeded in many respects. The tasks which it has set itself have been so far eminently practical. The same may be said, still more justly, about its methods, which in most cases found no examples to follow, and had to be devised spontaneously and independently. The possibilities of further practical tasks of industrial statistics are obviously not exhausted; there are many means of statistical expression permitting productiveness and efficiency of work to be followed closely as is shown by methods of industrial statistics in countries with planned economy. But it should be borne in mind that it is equally important for this department of statistics to solve other problems, *viz.*, to describe in a detailed way Czechoslovak industry in its organizational, functional, structural, and dynamic aspects, and that not as an isolated phenomenon, but as an organic component of the whole of our economic system, along with agricultural production. Only the achievement of an exact analysis of the results from this general point of view can show if this goal has already been attained. If gaps become evident, it will be necessary to complete present investigations. Perhaps in pursuing this end we shall find it appropriate to organize some kind of independent annual investigation of production in the traditional census form, including within a single scheme all the important components and results of the process of production and permitting the reconstruction of value added by manufacture.

Such a census will only be possible when the first state of consolidation is over. On the other hand, we ought to see that the number and possibly even the scope of investigations repeated at short intervals be reduced to the strictly necessary minimum and that sampling methods find wider application. With a production census carried out from time to time, we should probably find this "surgical operation" easier and the results of statistics of great frequency could be exploited to a far greater extent than up to now.

Résumé

En Tchécoslovaquie, la nationalisation des mines et des grandes industries, l'organisation de la production et l'application du Plan économique biennal, ont eu des conséquences considérables dans le domaine des statistiques industrielles. A l'heure actuelle, on procède, dans l'industrie, à deux enquêtes systématiques entreprises sur une large échelle: une enquête mensuelle sur la main-d'oeuvre, les achats et les ventes; et une enquête mensuelle (ou trimestrielle) sur la production et la consommation des matières premières de base. Les dispositions nécessaires sont prises en vue d'une troisième enquête approfondie sur la consommation de combustible et d'énergie dans l'industrie.

Le Plan biennal prévoit un contrôle systématique des progrès accomplis dans son exécution: des quantités mensuelles de production sont fixées pour 140 articles répartis en 15 groupes, et des rapports de situation indiquent les quantités effectivement produites et le pourcentage de réalisation du Plan. En collaboration avec le Bureau d'Etat chargé de l'Organisation (*State Planning Office*), le Bureau de statistique de l'Etat calcule les indices pour chacun des 15 groupes, ainsi qu'un indice global

pour l'ensemble de l'industrie, pondéré en fonction du nombre de personnes qui travaillent dans les differantes branches de la production.

Le Bureau de statistique prépare un nouvel indice de la production industrielle en Tchécoslovaquie, en se fondant sur les rapports prévus dans le Plan biennal pour 12 groupes de base comprenant 80 articles, l'année 1937 étant prise comme période de référence. On adoptera plus tard une nouvelle période de référence pour établir des séries parallèles ou une série unique; on choisira une année d'après-guerre, afin de tenir compte des changements de structure qui sont survenus depuis la guerre dans l'industrie.

On n'a pas procédé depuis la fin de la guerre à un recensement industriel, au vrai sens du mot On ne peut manquer de constater que les institutions internationales de statistique ont tendence à demander plus de données, dans le domaine des statistiques industrielles, et à appliquer des méthodes uniformes pour les rassembler. En cette matière, la contribution de la Tchécoslovaquie est d'ores et déjà considerable.

LES PROGRES REALISES EN FRANCE DANS LE DOMAINE DE LA FORMATION DES STATISTICIENS ET LE FONCTIONNEMENT DE L'ECOLE D'APPLICATION DE L'INSTITUT NATIONAL DE LA STATISTIQUE ET DES ETUDES ECONOMIQUES

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L'organisation de la statistique sur le plan administratif en France est d'origine relativement récente. Si le premier Bureau officiel de statistique a été créé il y a environ 150 ans, (il connut d'ailleurs des fortunes diverses et disparut même complètement à certaines époques) on ne peut guère parler de l'existence d'un véritable Service statistique avant 1908, date à laquelle, grâce aux efforts de MM. Lucien March et Michel Huber, il fut possible de grouper un petit nombre de jeunes fonctionnaires qui devaient faire le renom de la Statistique Générale de la France (S.G.F.): Parmi eux étaient Marcel Lenoir, Duge de Bernonville, Henri Bunle; le premier mort prématurément, les deux autres membres de l'Institut International de Statistique.

Auparavant, certes, plusieurs Français éminents s'étaient distingués dans la statistique administrative, mais il n'existait pas de Corps de fonctionnaires statisticiens. Aujourd'hui le Corps des Administrateurs de l'Institut National de la Statistique et des Etudes Economiques (I.N.S.E.E.) successeurs des statisticiens de la S.G.F., comprend 150 agents, dont les plus jeunes ont reçu une formation spécialisée dans une Ecole créée en 1942, et qui n'a pas encore atteint son plein développement. Le but de la présente communication est de montrer quelles ont été les étapes parcourues entre la situation initiale et la situation actuelle et de décrire le fonctionnement de l'Ecole d'Application de l'I.N.S.E.E.

On peut distinguer trois périodes dans l'histoire de la formation des statisticiens français:

a) Avant 1940: époque de la Statistique générale de la France.

b) De 1941 à 1946, période pendant laquelle a fonctionné le Service National des Statistiques (S.N.S.)

c) Depuis 1946, date de la création de l'I.N.S.E.E.

Les moyens matériels mis à la disposition de la Statistique Générale de la France, très faibles au début, ne se sont accrus que fort lentement. On comptait une demi-douzaine de statisticiens avant la guerre de 1914;

il n'y en avait que quinze en 1939, y compris ceux qui étaient détachés soit dans le Service Régional d'Alsace et de Lorraine à Strasbourg, soit en Indo-Chine où un Service de statistique générale avait été créé. La faiblesse de ces effectifs présentait de très graves inconvénients en ce qui concerne la formation du personnel. En premier lieu, elle empêchait tout recrutement régulier. En effet, la seule voie d'accès aux fonctions de statisticien était un concours d'un niveau particulièrement élevé portant essentiellement sur les mathématiques, l'économie politique, l'anglais et l'allemand. Mais un concours ne pouvait être ouvert que lorsqu'une vacance se produisait dans les cadres par suite de décès, de départ, etc., ce qui était extrêmement rare. Une telle situation était de nature à décourager les candidats éventuels à l'emploi de statisticien. Il est notoire d'ailleurs que les concours portant sur un trop petit nombre de places ne réunissent généralement que peu de candidats, les chances de succès étant jugées trop faibles. Une fois reçu le candidat était aussitôt mis en contact avec la réalité administrative; sa formation professionnelle était surtout le fruit de l'expérience quotidienne acquise auprès des statisticiens plus anciens et déjà confirmés. Si l'on ajoute que les ouvrages consacrés à la statistique étaient alors très peu nombreux en France on aura une idée des difficultés qu'ont dû surmonter les jeunes statisticiens de cette époque.

On doit constater toutefois que cette organisation si rudimentaire et si imparfaite n'a pas donné de mauvais résultats. Les statisticiens de la S.G.F. avaient choisi délibérément leur carrière; quelques-uns d'entre eux furent amenés à abandonner celle-ci pour en choisir une autre plus rémunératrice ou plus conforme à leurs goûts; mais ceux qui restaient devinrent assez rapidement des techniciens de premier ordre qui parviennent à s'imposer tant dans leur pays qu'à l'étranger par la qualité et l'étendue de leurs connaissances et de leurs travaux. Les difficultés rencontrées au début, qui avaient suscité un effort continu de leur part, n'ont peut-être pas été étrangères à ce succès.

Un progrès important dans l'enseignement de la statistique en France avait été toutefois réalisé dès 1920, époque à laquelle fut créé à l'Université de Paris, un Institut de statistique placé sous la direction scientifique des Facultés de Droit, des Sciences, de Médecine et des Lettres. Les cours de l'Institut de statistique étaient professés par des personnalités éminentes de la statistique française appartenant soit à la S.G.F., soit à l'Université, soit au monde des affaires. L'enseignement portait essentiellement sur les sujets suivants:

Eléments de méthode statistique,
Statistique mathématique,
Application de la méthode statistique aux affaires,
Eléments d'économie politique mathématique,

Opérations financières,
Démographie et statistiques sanitaires,
Théorie mathématique des assurances.

Chaque cours comprenait vingt leçons environ réparties en deux semestres (novembre-février et mars-juin).

Etant donné le caractère intermittent du recrutement des statisticiens de la S.G.F. ces leçons ne pouvaient guère être suivies par les candidats au concours, mais elles étaient fort utiles aux jeunes gens qui avaient déjà été reçus à ce dernier et à qui des facilités étaient données pour assister aux cours, passer les examens et acquérir les diplômes de l'Institut, tout en s'acquittant de leurs fonctions administratives. Il est à noter que la majeure partie des élèves de l'Institut était constituée soit par des Français ayant des obligations en dehors de l'administration mais voulant s'initier aux disciplines statistiques, soit par des étudiants étrangers aux yeux desquels les diplômes de l'Institut avaient la plus grande valeur.

Un autre progrès notable en rapport avec la formation professionnelle de statisticiens fut réalisé entre les deux guerres: il s'agit de la publication d'ouvrages didactiques de statistique tant théorique que pratique. On mentionnera parmi les plus importants la "Statistique mathématique" du professeur G. Darmois (1928) et le "Cours de démographie et de statistique sanitaire" en six volumes de M. Huber (publié à partir de 1938). Le premier contient les matières exigées au concours d'entrée à la Statistique Générale de la France: le second reproduit les leçons professées par l'auteur à l'Institut de statistique de l'Université de Paris.

On voit ainsi que si les progrès réalisés au cours de cette première période ont été assez lents, ils ont été importants, compte tenu de l'extrême modicité des crédits qui étaient alors affectés en France à la Statistique.

En 1941, l'organisation générale de la statistique française subit de profondes modifications. La S.G.F. fut intégrée dans un ensemble beaucoup plus vaste qui prit le nom de "Service National des Statistiques" (S.N.S.) placé sous l'autorité de M. le Contrôleur général de l'Armée Carmille, arrêté par l'ennemi en 1944 et déporté au camp de Dachau où il mourut.

Le nouveau Service est décrit dans la Loi du 11 octobre 1941. Sa création était motivée par des mobiles patriotiques: il s'agissait de reconstituer sous une autre forme les anciens bureaux militaires de recrutement et de tenir ainsi à jour les dossiers individuels des hommes mobilisables, cela sans éveiller l'attention de l'ennemi.

Sans donner le détail du fonctionnement du nouvel Organisme, on peut souligner les points suivants:

a) Le personnel supérieur du S.N.S. comprend environ 200 fonctionnaires (Effectif initial de 150 devant être complété par la suite). Il est constitué pour la première formation du Corps par les statisticiens de la S.G.F. et par d'anciens officiers de l'Armée. Ces fonctionnaires supérieurs prennent le nom, assez peu caractéristique d'ailleurs, d'"Administrateurs" du S.N.S.

b) Le nouveau Service a une articulation régionale: il comprend en effet en dehors de la Direction générale, des Directions régionales placées en principe aux chefs-lieux des régions économiques au nombre d'une quinzaine environ).

c) Le Service est doté d'un matériel mécanographique extrêmement important (machines à cartes perforées de différents types). Il possède en tout 500 petites machines—perforeuses et vérificatrices—et 125 grosses machines—trieuses, tabulatrices, etc.).

Cette organisation devait permettre de réaliser de sérieuses améliorations dans la formation des statisticiens. Si, en effet, le recrutement initial était peu homogène et à certains égards peu satisfaisant, les effectifs étaient suffisamment nombreux pour permettre d'envisager dans l'avenir le recrutement annuel d'une dizaine de jeunes fonctionnaires. On voit ainsi apparaître une caractéristique qui faisait défaut à la S.G.F. à savoir la régularité du recrutement du personnel supérieur. Ce recrutement change d'ailleurs quelque peu de caractère et devient mixte. Les administrateurs du S.N.S. sont en effet recrutés:

a) Par voie de concours. Ce concours diffère assez peu de l'ancien concours de la S.G.F.; il comporte en plus une composition d'ordre général et en moins une composition de langue vivante.

b) Directement à la sortie de l'Ecole Polytechnique. Ce dernier recrutement est très significatif car il met les administrateurs du S.N.S. sur le même plan que les ingénieurs des autres grands Corps techniques de l'Etat tels que les Mines et les Ponts-et-Chaussées, dont les cadres supérieurs proviennent en grande partie de l'Ecole Polytechnique. En effet, les échelles de traitement des administrateurs du S.N.S. sont les mêmes en principe que celles des ingénieurs des autres grands Corps. Cela constitue un avantage appréciable par rapport à la situation des statisticiens de la S.G.F., dont les traitements étaient médiocres et les perspectives d'avancement limitées.

La formation générale et technique des jeunes gens ainsi recrutés (de l'une ou de l'autre façon) était confiée à une Ecole d'Application dont la création était prévue par le texte du 11 octobre 1941 et dont le rôle était précisé par un arrêté du 23 octobre 1942. D'après cet arrêté:

L'"Ecole d'Application du S.N.S. a pour but de former: d'une part les administrateurs du Service—d'autre part, des statisticiens plus spécialement aptes à diriger les services de statistique des grandes entreprises industrielles, commerciales ou autres."

En ce qui concerne les administrateurs, la durée des études, fixée normalement à deux ans, était provisoirement réduite à une seule année.

L'Enseignement de l'Ecole (dont le régime est l'externat) était donné en liaison avec l'Institut de Statistique de l'Université de Paris. Les cours se rapportant à la méthode statistique et à ses applications étaient communs aux deux Organismes; les cours portant sur des questions générales et sur les langues vivantes étaient propres à l'Ecole.

Voici quelle était la répartition des cours:

Elaboration des statistiques	20	leçons
Analyse statistique élémentaire	25	,,
Statistique mathématique	25	,,
Théorie mathématique des opérations financières	25	,,
Démographie et statistique sanitaire	20	,,
Statistique agricole	12	,,
Statistique économique et sociale	20	,,
Statistique appliqueée aux affaires privées	20	,,
Econométrie	25	,,
Mécanographie	20	,,
Finances publiques	12	,,
Technologie industrielle	25	,,
Questions coloniales	25	,,
Géographie économique	25	,,
Législation générale	20	,,
Economie politique	20	,,
Economie monétaire	10	,,
Langues vivantes	75	,,

Cet enseignement était complété par des travaux pratiques, des conférences sur des questions particulièrement importantes, des visites d'usines et des stages dans les divers bureaux spécialisés du S.N.S.

L'organisation du S.N.S. constitue sur un autre point un progrès notable par rapport à l'état de choses antérieur.

Les statisticiens de la S.G.F. souffraient du manque de débouchés; ill ne pouvaient prétendre normalement à aucun emploi administratif en dehors de la S.G.F.

Les textes relatifs au S.N.S. prévoient la création au sein de chaque Ministère de "Services annexes"de statistique, constitués par des administrateurs provenant du S.N.S. C'est qu'en effet les services statistiques en France sont décentralisés dans une large mesure; dans beaucoup de services chargés de l'élaboration de leurs propres statistiques, celle-ci est confiée à un personnel non technique, peu stable, et travaillant dans de mauvaises conditions. Il est donc souhaitable que ce personnel soit remplacé par du personnel véritablement qualifié qui ne peut être trouvé qu'au sein du Service central de Statistique. L'application de ce principe, tout en faisant faire de gros progrès à la statistique, est susceptible de donner aux statisticiens des débouchés intéressants qui leur faisaient défaut jusque là. Mais elle ne pourra évidemment se faire que dans la mesure où il aura été possible de former des statisticiens en nombre suffisant.

Le système qui vient d'être décrit a fonctionné de 1942 à 1946. Malgré les difficultés multiples dues aux circonstances, il a déjà permis de former une vingtaine de statisticiens (soit plus que l'effectif de la S.G.F.) dont le niveau moyen est fort honorable. Il a permis aussi de créer au Ministère du Travail un service de statistique qui a obtenu de très bons résultats et en particulier une amélioration notable des statistiques des salaires et de la main d'oeuvre.

Ainsi qu'il ressort du programme précédemment détaillé l'enseignement de l'Ecole d'Application du S.N.S. était un enseignement essentiellement statistique. Il ne comportait qu'un seul cours d'économie politique générale. Cependant, du fait des circonstances, les études économiques avaient pris une part de plus en plus importante au sein de la S.G.F. puis du S.N.S.

Un Institut de conjoncture (I.C.) avait été créé en effet en France en 1938 et rattaché à la S.G.F. Mais par suite des évènements il ne commença à fonctionner qu'en 1941 sous la direction de M. Sauvy. Aux termes de la loi, il avait pour mission essentielle "d'observer l'évolution de la situation économique en France et à l'étranger au moyen de données statistiques et de tous renseignements chiffrés ou non chiffrés et, éventuellement, de formuler des prévisions sur l'évolution ultérieure probable." On sait avec quel talent et quelle autorité M. Sauvy s'acquitta de la tâche qui lui avait été ainsi confiée, avec des moyens très réduits en personnel et en matériel.

L'Institut de conjoncture fut transféré au S.N.S. avec toutes ses attributions. Il ne comprenait que quelques fonctionnaires (statisticiens de la S.G.F. auxquels s'ajoutaient plusieurs chargés de mission spécialisé dans un domaine particulier—agriculture, industrie, etc.). Ce personnel ne recevait pas de formation spéciale préalable. Pour l'avenir, il était envisagé que la S.G.F. fournirait à l'I.C. les statisticiens éprouvés dont ce dernier aurait besoin. Dans l'esprit de ses créateurs, l'I.C. devait être en effet un organe scientifique, essentiellement à base de statistique, et non pas une simple entreprise de journalisme économique: il paraissait donc normal que l'on fît appel à des statisticiens ayant déjà suffisamment de métier et ayant manifesté du goût pour les études économiques.

Cette situation subsista jusqu'en 1946, date à laquelle fut créé l'Institut National de la Statistique et des Etudes Economiques pour la France et les Territoires d'Outremer (I.N.S.E.E.). Le nouveau Service comprend:

1°) l'ancien S.N.S. en entier (y compris par conséquent la S.G.F. et l'I.C.);

2°) un certain nombre de services d'études appartenant au Ministère de l'Economie Nationale et dont l'un (le Service dit des "Economies Etrangères") comportait des effectifs relativement importants—150 personnes environ.

Depuis le 1er avril 1946, l'I.N.S.E.E. fonctionne sous l'autorité de M. Closon, ancien Commissaire de la République, qui s'est attaché à développer l'Ecole d'Application telle qu'elle existait au temps du S.N.S.,

a) En portant la durée des études à deux ans à partir du 1er novembre 1947, comme il était d'ailleurs prévu initialement, et conformément à la situation qui prévaut dans les autres écoles d'application d'ingénieurs;

b) En renforçant sensiblement les études économiques.

L'I.N.S.E.E., quand il fonctionnera normalement, c'est-à-dire quand tous les fonctionnaires du cadre supérieur auront reçu la formation adéquate, comprendra en effet un nombre relativement important de statisticiens et d'économistes qualifiés. Après une étude minutieuse de la question, il a été jugé indispensable de donner la même formation initiale à tous ces fonctionnaires.

L'enseignement prévu par les nouveaux programmes comprend trois parties:

1°) Un enseignement portant sur la méthode statistique, considérée:
  a) comme méthode de description des collectivités dans les domaines les plus divers;
  b) comme méthode générale d'investigation scientifique.

2°) Un enseignement descriptif des principaux domaines d'investigation statistique et économique (technologie ou économie descriptive).

3°) Un enseignement économique.

Pour ne pas alourdir cet exposé la répartition envisagée pour ces enseignements, entre les deux années scolaires, a été reproduite en annexe.

Afin de rendre l'enseignement plus vivant, et d'éviter des exposés professoraux souvent fastidieux, certains cours seront distribués au début de l'année aux étudiants qui devront en prendre connaissance avant les leçons; celles-ci seront consacrées à la discussion et au développement des points les plus importants, à des compléments, etc. On espère ainsi intéresser au maximum les élèves aux matières étudiées.

L'enseignement de l'Ecole continue à être donné en liaison avec l'Institut de Statistique de l'Université de Paris qui a développé son activité parallèlement à celle de l'Institut National en créant les cours suivants :

Méthodes statistiques appliquées à la gestion des entreprises	20 leçons
Méthodes statistiques appliquées aux sciences biologiques et à l'expérimentation agricole	20 »
Méthodes statistiques appliquées aux techniques et aux recherches industrielles	20 »
Statistique agricole	10 »
Mécanographie	20 »
Méthodes statistiques appliquées à la médecine et à l'hygiène sociale	12 »
Analyse factorielle	10 »
Comptabilité	20 »
Economie générale	30 »
Génétique mathématique	15 »
Théorie mathématique des populations	20 »
Algèbre matricielle	10 »

Notons enfin que les étudiants viennent d'être dotés d'un instrument de travail incomparable par la publication en 5 volumes—(à partir de 1943)-du cours que M. Michel Huber a professé à l'Institut de Statistique sous la dénomination "Cours de statistique appliquée aux affaires" et qui a été scindé en deux ("Statistiques économiques et sociales" et "Statistiques d'entreprise"). M. Huber a pu mener à bien cette tâche considérable avant sa mort, survenue en avril dernier, et qui a été si vivement ressentie, non seulement en France, mais dans les nombreux pays où sa science faisait autorité.

On a vu qu'un certain nombre des cours précédents figurent aussi dans le programme de l'Ecole d'Application. Cette liaison entre deux organismes d'enseignement dont les domaines d'activité se recouvrent partiellement, a permis de réaliser avec le minimum de moyens matériels un enseignement statistique et économique sans égal en France.

Parallèlement au développement de l'Ecole d'Application, l'I.N.S.E.E. s'efforce:

a) de remplir son rôle de coordination statistique, notamment en mettant à la disposition des autres Ministères les techniciens qui leur manquent en matière de statistique et de continuer ainsi en l'amplifiant la politique des "Services annexes" inaugurée par le S.N.S.;

b) d'envoyer des statisticiens dans les territoires d'Outre-mer.

Jusqu'en 1939 en effet, il n'existait de Service de Statistique digne de ce nom, qu'en Indochine où des statisticiens de la S.G.F. avaient été détachés. Le plus éminent d'entre eux Henri Ulmer a été tué à l'ennemi en 1940. Son successeur, M. l'Inspecteur général Bournier, a repris son oeuvre, et malgré des difficultés considérables, il a pu mener à bien la création de services de statistique dans plusieurs territoires coloniaux ou protégés. Non seulement le Service d'Indochine a subsisté malgré les événements, non seulement des services fonctionnent de manière de plus en plus satisfaisante dans les trois territoires d'Afrique du Nord, mais de jeunes statisticiens ont pû être envoyés en A.O.F. et en A.E.F. Cette oeuvre n'est qu'a son début. Ainsi, certains des statisticiens les plus actifs pourront-ils trouver d'intéressants débouchés outre-mer et contribuer à donner à la France l'organisation statistique coloniale qui lui manquait.

En ce qui concerne le recrutement même des statisticiens, une modification importante est à l'étude: le concours d'entrée serait supprimé, et tous les fonctionnaires supérieurs de l'I.N.S.E.E. proviendraient de l'Ecole Polytechnique, comme les Ingénieurs des grands Corps de l'Etat. Une seule exception cependant: les fonctionnaires du cadre moyen auraient accès au cadre supérieur.

On voit par là, qu'avec des méthodes diverses, avec des moyens différents, et compte tenu de circonstances changeantes, les dirigeants successifs de la Statistique officielle en France se sont efforcés:

a) de former un Corps de techniciens de haute valeur;

b) de leur assurer des conditions matérielles honorables et des débouchés suffisants. Sur ce dernier point, on signalera les possibilités futures de débouchés dans les entreprises nationalisées et dans l'industrie privée où les méthodes statistiques pénètrent de plus en plus;

c) de les répartir autant que possible dans tous les services ministériels élaborant des statistiques et dans les territoires d'Outre-Mer.

Les progrès réalisés dans ces différents domaines au cours de la période récente ont été particulièrement notables.

Annexe

Programme des cours de l'Ecole d'Application de l'I.N.S.E.E.
1ère année

	Nombre de leçons
a) *Statistique*:	
Elaboration des statistiques et pratiques statistique	20
Analyse statistique	25
Mécanographie	15
Statistiques économiques et sociales	20
Mathématiques financières	20
Démographie	20
Statistique agricole	10
Exercices pratiques d'analyse statistique	10
Total:	140
b) *Economie descriptive et Technologie* :	
Technologie industrielle	25
Technologie agricole	15
Technologie commerciale	10
Finances publiques et budget	15
Données juridiques élémentaires	10
Géographie économique et humaine	25
Total:	100
c) *Enseignement économique:*	
Théorie économique générale	30
Economie inductive: Observation économique et conjoncture	20
Théorie de Keynes	12
Répartition (revenu, salaires et profits)	15
Mécanisme des prix	15
Commerce international et change	12
Théories monétaires	12
Total:	116
d) *Langues vivantes*:	
Première langue (perfectionnement)	20
Deuxième langue (débutants)	40
Total:	60

Total général : 416 leçons,
soit, pour 28 semaines, environ 15 heures par semaine.

2ème année

a) *Statistique*:

Méthode des sondages	10
Statistique mathématique	50
Théorie mathématique des populations	10
Analyse facotrielle	10
Conférences et exercices pratiques de statistique appliquée	10
Exercices pratiques de statistique mathématique	10
Mécanographie	10
Statistique appliquée aux entreprises	20
Total:	130

Cours facultatifs:

Statistique appliquée aux recherches industrielles
Statistique appliquée à l'expérimentation agricole
Génétique mathématique

b) *Technologie et économie descriptive*:

Géographie économique et humaine — 2ème année	20
Questions coloniales	12
Technologie bancaire	10
Comptabilité	20
Santé, Hygiène	10
Organisation du travail et des affaires	12
Organisation administrative de la France	5
Organisation de l'I.N.S.E.E. et des principaux Services de Statistique et d'études économiques en France et dans le Monde	5
Total:	94

c) *Enseignement économique*:

Observation économique et conjoncture	15
Econométrie	25
Mouvements économiques généraux	10
Finances publiques et économie	10
Population et économie	10
Politique sociale dans ses aspects économiques	10
Intervention économique de l'Etat	10
Localisation économique	10
Théories économiques de l'emploi	10
Total:	110

d) *Langues vivantes:*

Perfectionnement (anglais et allemand: 25/25)

Total général: 384 leçons.

Résumé

Developments in the training of statisticians in France are outlined in three periods: (1) during the existence of the *Statistique Générale de la France* before 1940 ; (2) under the National Statistical Service from 1941 to 1946; (3) since the establishment of the National Institute of Statistics and Economic Studies in 1946.

Important developments during the first period included the establishment of an Institute of Statistics at the University of Paris and the publication of a text on Mathematical Statistics by Professor G. Darmois and of a course of lectures on "Demography and Health Statistics," in six volumes, by Mr. Huber.

During the second period, a School of Applied Studies was established under the National Statistical Service, wherein courses on the statistical method and its applications were given jointly with the Institute of Statistics of the University of Paris.

Under the National Institute of Statistics and Economic Studies, the work of training statisticians is continued in the School of Applied Studies, wherein instruction is given jointly with the Institute of Statistics of the University of Paris in: (1) statistical methods applied to various fields; (2) descriptive economics and technology; (3) economic theories; and (4) languages.

A detailed program of courses for two years is given in an appendix.

MEASUREMENT OF AGRICULTURAL OUTPUT IN DENMARK

by Einar Cohn

Director, Department of Statistics (Denmark)

For three quarters of a century, since 1875, Denmark has used practically the same method in compiling yearly crop reports. These reports have comprised all the important items, *i.e.*, grain, potatoes, beets for manufacturing and for feed, hay and straw, and, starting in 1911, grass and forage crops for summer pasturage. Field and garden seed crops have been included since 1941.

Statistics of livestock and animal products are in their present forms of a much later date than those of vegetable crops. To meet the emergency demands arising first from the crises in the thirties, and later from the war, annual surveys of animal production were undertaken. Later, in 1938, regular monthly reports on the quantity of animal production were started, and still later the scope of these statistics has been enlarged to cover distribution as well as production. This development has now reached a state where it is possible to prepare regular, detailed reports showing all facts on production from the time when the crops are harvested or the raw products are imported, to the time when the completed products more or less processed are exported or are distributed on the home market.

I shall not use the time to explain the rather simple principles by which harvests are calculated. We in Denmark use the same methods that are used in other countries for regular crop statistics. A complete farm census is taken during the summer to determine the area devoted to cultivation of each of the several crops, and late in the fall, when the harvesting is finished, each of the 1400 community councils reports the average yield for each crop. By multiplying the areas cultivated by these yield figures the total volume for each crop is found. For measuring the amount of grass and green fodder another method is used, as the milk recording societies report the quantity of fodder grazed by each animal.

Calculation of animal produce has been simplified by the fact that only a small portion of the total production is consumed by the producers themselves, and even this portion for the larger part goes through the market in the form of meat, pork, butter, and other products. The calculation is also made easier by virtue of the fact that dairies report to their central organizations; here the figures for the quantities and distribution of the production are compiled and sent to the Statistical

Department of the Government. However, with regard to meat and pork production, the veterinary controls report the number of animals slaughtered outside the farms and information on the greater part of the total egg production is provided through Government control of the quality of eggs for export.

All this information, to which is added estimated figures for the small amounts consumed by the producers without having been through the market, is finally summed up in the Statistical Department, thus giving an overall picture of the production, its size and composition. Even if the estimates of consumption by producers introduce an element of uncertainty in the final results, this is of no importance as 85-95% of the total production passes through the market and thus is exactly recorded.

Monthly figures are computed for the production of the most important animal products, that is, milk, butter, cheese, meat, pork, and eggs; and index numbers are published for each commodity and for the total production. At the end of each year, moreover, a more detailed picture is given of the production and distribution of both vegetable and animal commodities. Information is also provided on how much of the crop is used for human consumption and how much for animal feed, and by adding figures on imports of feed to the amounts of home-grown feed the total amount used throughout the year for animal production is found. By working out the statistics of agricultural production to the smallest details it is possible to construct a picture of total food consumption.

I do not believe that a more comprehensive and at the same time a more simple method can be found for the compilation of statistics of agricultural animal production. But it is obvious that this method is practicable only in countries where production is organized along the same lines as in Denmark, and where such a large part of the production passes through the market and is recorded there before consumption. Such is not the case in many countries, the majority I should judge, and other means of obtaining the desired information must be found.. I shall try to appraise very briefly some of these means.

One method is to base the figures for animal production upon the variations in the livestock and eventually the amount of feed used during the period in question. This method cannot, however, be very exact.

In order to employ this method it is necessary to make estimates of the number of births and natural deaths for each of the several species of animals before arriving at the estimated number of animals used for food; and for milk and egg production a certain average yield per animal must be assumed. Of course these estimates in reality vary considerably, and very little experience will be available to determine the rate of variation. Especially for milk and egg production it is true that they are just as much dependent upon the intensity of feeding as upon the number of producing animals. In order to obtain somewhat reliable figures for these kinds of production, it is therefore necessary to know the amount of feed used, and even such compilations with a rather wide margin of error demand some length of observation time. For shorter periods than one year the method is even less reliable, as seasonal changes cannot be taken into account with any degree of certainty. In trying to reach the next stages, for example, butter and cheese production, new elements of uncertainty arise, bringing in estimates of distribution for different purposes, fat content, etc.

Another method which might be discussed is to base production statistics upon information given by farmers. But this method is also unsatisfactory. The farmer may, as is humanly excusable, be interested in supplying figures with a certain bias—taxes and government restrictions playing a part in his calculations. But often the farmer is not in possession of sufficient knowledge to give accurate figures. This last source of error may be smaller in more developed agricultural populations, but will probably never be wholly insignificant.

This method of direct questioning, as well as the calculating method I mentioned before, has the disadvantage that it tells nothing of the processing of the products, which most often takes place after the products have left the producers. Further information is therefore necessary for countries where large parts of the production are sold directly from the farms and then processed.

The questioning method might, in contrast to the calculating method, be practicable for shorter periods than a year. Thus it might be feasible through appropriate sample surveys, each embracing a certain part of the farms, to measure the variations in production from month to month.

The conclusion must be that a combination of these methods must be used in countries where the farmers, the producers themselves, consume a relatively large part of the production, or sell any considerable quantity directly to consumers.

I have thus far been dealing only with statistics of actual production. When we want to make forecasts, other devices must be employed even if the same basic methods are used. Forecasts might be based directly upon a general calculation or might be taken as a total of microprognoses, established by questioning a number of farmers or dealers about their expectations. I should not, however, expect more accurate results from the questioning method. The macroprognosis is of course made up from the same elements as the microprognosis, but I should prefer a forecast worked out by a trained statistician, who commands all available knowledge about the behavior of producers under certain given conditions. This method is more saving in time and money.

The value of any prognosis depends naturally on acquaintance with the facts that determine the production results. To make a forecast for milk production necessitates information not only on the number of milk cows but also on the amount and quality of the feed available. It is also essential to know how the farmers will react, for example, in case of a decrease in the amount of feed; whether they will reduce their livestock or decrease the intensity of the feeding. Different reactions will give different results for forecasting both for a longer and for a shorter term. As a means of following variations in livestock we have in Denmark through a number of years used sampling censuses, each covering one-fifth of the rural communes.

We were forced into these sampling censuses, which we take every six weeks, in the first years of the 1930's when the British import quotas for bacon made it imperative to know beforehand the number of pigs moving to the slaughterhouses.

Each summer a countrywide census of pigs is taken, making it possible to verify the results of the partial censuses; the two kinds of censuses have proved to agree satisfactorily.

In a corresponding way, we obtain information about seasonal variations in the number of cattle, horses, and chickens; we can also in the same way follow the movement in the agricultural working population.

Other agricultural operations may be thus followed, such as the size of the areas sown with winter grain in the fall, extent of frost damage, etc.

In the good old times it was the responsibility of the statisticians to collect information about preceding events. Nowadays we don't satisfy the Government, the public, or ourselves by recording past events; the demand is much greater for information about the future. This demand applies to balance of foreign trade or balance of payments for coming years, to the size of agricultural production and to imports of grain and seed necessary in the ensuing harvest year, and many other questions.

In order to comply with these demands, sample surveys have been of much use to us. With little delay, they give the latest information about the actual situation; being taken at brief intervals they illustrate furthermore the conditions at various seasons of the year and increase our knowledge of the various reactions of the producers. As I have said before, in most cases the statistician will with the help of such surveys, even if they are scattered, get safer results when he tries to predict than he gets from questioning a large number of persons or firms.

What I mean to say is only that the best statistical technique is common sense based on figures. The trouble is that most of us have not got enough of either.

Résumé

Depuis 1875 des rapports annuels sur les récoltes sont établis au Danemark pour toutes les récoltes importantes; à l'heure actuelle ces rapports portent également sur les cultures fourragères et les semences. Entre 1930 et 1940 on a commencé à réunir des statistiques sur le bétail et les produits animaux. Au cours des dernières années, ces statistiques ont été étendues à la distribution aussi bien qu'à la production.

Suit une brève description des méthodes employées pour l'établissement des statistiques sur les récoltes et les produits animaux. Il doit être admis que ces méthodes ne peuvent s'appliquer que dans des pays où la production est organisée selon les mêmes principes qu'au Danemark et où une grande partie de la production est vendue au marché avant de parvenir au consommateur.

D'autres méthodes sont ensuite discutées, y compris la méthode des questions posées directement aux agriculteurs et celle de l'évaluation indirecte basée sur l'estimation des variations du cheptel et de la quantité de fourrage utilisée. On propose de combiner ces deux méthodes dans les pays où les agriculteurs consomment une grande partie de leur production ou en vendent directement aux consommateurs une partie appréciable.

Des sondages statistiques portant chaque fois sur un cinquième des communes rurales, ont été faits à de brefs intervalles en vue de suivre les variations saisonnières du cheptel et le mouvement de la population agricole active. Les résultats en sont vérifies chaque été, dans le cas des porcins, au moyen d'un recensement portant sur tout le pays et ils ont été reconnus satisfaisants.

Pour établir des prévisions, les statisticiens obtiendront des résultats plus surs en procédant à des sondages fréquents qu'en interrogeant en une seule fois un grand nombre de personnes.

STATISTICS AS A MEANS OF IMPROVING THE EDUCATIONAL SYSTEM

by Philip J. Idenburg

Director General of Statistics (The Netherlands)

He who has learned to see the educational system of a country, notwithstanding all its diversity, as one large enterprise, transferring the cultural achievements of a people to its younger generation, will soon realize that he is faced with an undertaking without equal. More capital has been invested in education than in any industrial plant or public utility. More people are employed. The costs are higher. This comparison imposes itself especially when, as in the Netherlands, the costs of education are paid for directly, or in the form of subventions to societies and institutions, by public funds. But from the moment that we have learned to see the economic life of a people as a whole and to study the national income and expenditure, it is of no great importance whether the Government or private persons invest and spend their money in education. Then, without regard to forms of organization in the educational field for all countries, the question arises whether the expenses are economically justified.

Then we are urged to test education, like any other enterprise, in terms of its efficiency. Although statistics cannot give the final decision, they can be of great use for this purpose.

As illustration, I should like to give some information about the statistical work that has been undertaken in this field in the Netherlands.

In order to understand the significance of educational statistics in the Netherlands, it is necessary to explain in a few words the structure of the Dutch educational system.

There are in general three types of schools:

a. Elementary schools, age 6—13 years.
b. Secondary schools, age 12—17—19 years.
c. Universities, age 18—24 years.

The age limits indicated are only approximate and depend somewhat on the type of school, the faculty, etc.

All education in Holland is under direct government control. There are public and denominational schools, but they are all financed by the Government. Salary scales are the same for all teachers, who have to fulfill the same requirements with respect to their training and education.

Examination for admission or final examinations are largely the same for public and denominational schools, and the examinations are usually taken under close supervision of inspectors appointed by the Ministry of Education. For all high schools, for example, final examinations are taken on the same dates and the written work is the same all over the country.

There are two reasons why there is a great interest in eductional statistics in the Netherlands:

a. The great homogeneity of the basic data makes the material particularly suited for statistical elaboration.

b. As practically 100% of the costs of education are borne by the Government, the Ministry of Education has a special interest in all data about the results of the various types of schools, and the costs involved. Educational statistics as they have been compiled since 1929 by the Central Bureau of Statistics aim mainly at providing the following data:

i. Number of schools of each type, classified in public schools and denominational schools.
ii. Number of teachers.
iii. Number of pupils or students, by types of schools, previous education, age group, etc.
iv. Statistics on the costs of various types of schools, analyzed in main elements.

These data are published annually by the Central Bureau of Statistics, and used by the Ministry of Education.

To illustrate the significance of these statistics I should like to mention a problem which has for many years drawn the attention of educators in the Netherlands. It is the problem of the coördination of elementary and secondary education. In order to gain admittance to some types of secondary schools, candidates must pass an examination of admission. (Most secondary schools are accessible without such an entrance examination.) The examinations are such that every pupil who has satisfactorily finished elementary schools can pass it. Experience has shown that not all pupils who pass elementary schools with satisfactory results will do well in secondary schools. After three months in secondary school, pupils usually receive a report with marks. Correlations have been worked out between results as shown by these reports and the marks obtained at the entrance examination, and they have been used as a guide for attempts to improve methods for selection of pupils.

Another problem, of greater importance still, is the following. If the programs of the various types of schools are well balanced and adequate, then it must be possible for the majority of the pupils to finish their studies in the number of years determined for each type of school.

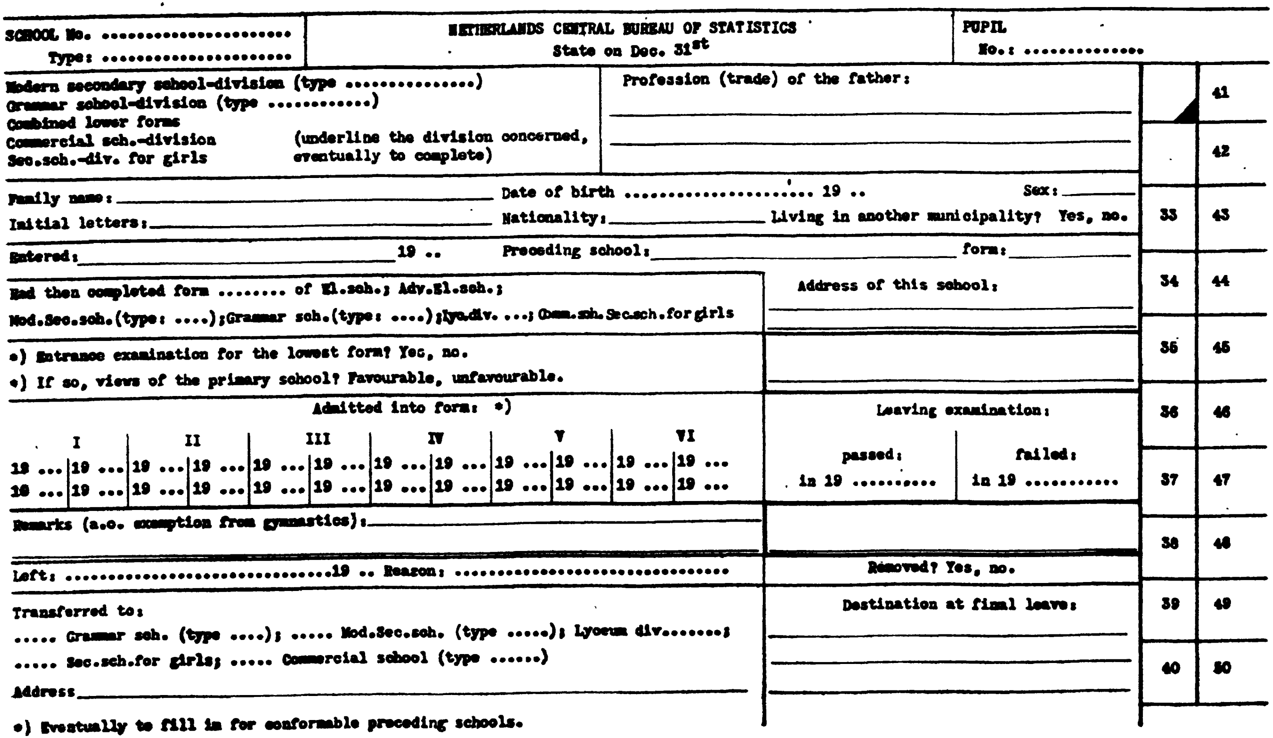
Once a year the pupils in Dutch schools move from one form to another, and promotion is based on progress made in the various subjects considered together. The system of promoting pupils on the basis of performance in individual courses is unknown in the Netherlands. Actually, statistics for secondary schools show that a considerable percentage of the pupils each year cannot be promoted to the next form and must repeat a form. A special statistical technique has been developed which permits construction of what may be called the "life tables" for pupils in secondary school, and similarly for students in the universities. It was found that less than 50% of the pupils are able to complete their studies in secondary school within the planned period of 5 years. Many need six or seven years, and considerable percentage never manage to pass the final examination.

Similarly, investigations were carried out to determine the average number of years needed by students in medicine, law, economics, and other fields to pass their examinations. These investigations are very useful in that they show the time actually needed by students to complete their studies, which is often considerably longer than the period according to the official programs. These studies are useful also in that they show the actual costs of education of each type.

In 1930, when the statistical project was initated, every secondary school was furnished with individual pupil cards which had to be filled in for each pupil admitted to the lowest form. On these cards the following items had to be entered: name, sex, date of birth; primary education; the views of the primary school on the pupil's qualifications to attend a secondary school; finally, the occupation of the father, in order to obtain an indication of the pupil's social milieu. The completed cards were returned by the director of the school to the Central Bureau of Statistics for statistical purposes. (See Figure 1.)

In 1931, these cards were sent again to the directors of the schools who were invited to complete them by answering the following questions: What were the results of the past scholastic year; whether the pupil had been moved up to a higher form or had to repeat the lowest form, and whether the pupil had been moved to another division of the same school or had left for another school. For pupils who had left the school, the reasons for leaving and the destination were requested. The answers to these questions provided a complete review of each pupil's progress during the past year.

This procedure was repeated in 1932 and consecutive years, with the understanding that the cards of those pupils who had left the secondary school were not submitted again to the directors of the schools. In 1942, it was found that the last of the pupils who had been admitted in 1930 to the lowest forms of the secondary schools had left. Thus,



SCHOOL No. ....
Type: ....

NETHERLANDS CENTRAL BUREAU OF STATISTICS
State on Dec. 31st

PUPIL
No.: ....

Modern secondary school-division (type ....)
Grammar school-division (type ....)
Combined lower forms
Commercial sch.-division
Sec.sch.-div. for girls
(underline the division concerned, eventually to complete)

Profession (trade) of the father:

Family name: ______ Date of birth .... 19 .. Sex: ____

Initial letters: ______ Nationality: ______ Living in another municipality? Yes, no.

Entered: ______ 19 .. Preceding school: ______ form: ______

Had then completed form .... of El.sch.; Adv.El.sch.;
Mod.Sec.sch.(type: ....);Grammar sch.(type: ....);Lyc.div. ...; Comm.sch. Sec.sch.for girls

Address of this school:

*) Entrance examination for the lowest form? Yes, no.

*) If so, views of the primary school? Favourable, unfavourable.

Admitted into form: *)

I		II		III		IV		V		VI	
19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...
19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...	19 ...

Leaving examination:

passed: in 19 ....

failed: in 19 ....

Remarks (a.o. exemption from gymnastics): ______

Left: ....19 .. Reason: ....

Removed? Yes, no.

Transferred to:
..... Grammar sch. (type ....); ..... Mod.Sec.sch. (type .....); Lyceum div.......;
..... Sec.sch.for girls; ..... Commercial school (type ......)

Destination at final leave:

Address ______

*) Eventually to fill in for conformable preceding schools.

	41
	42
33	43
34	44
35	45
36	46
37	47
38	48
39	49
40	50

FIG. 1

notwithstanding that none of the secondary schools had a complete course of instruction of over six years, it was twelve years before what may be termed the "1930 generation" had completed its schooling.

It is interesting to note how the Central Bureau of Statistics handled the vast quantities of statistical data which had been collected in the manner described above.

One of the characteristic features of this statistical procedure is the code number, a compact narrative of the course of study of the pupil concerned, composed of figures based upon the teacher's returns. Each figure and each sign in this number provides an explanatory comment on a particular phase of the pupil's course of study. The code number is constructed as follows:

The figure preceding the first comma always indicates the number of years of primary education. Following the comma is a code letter indicating the type of secondary school attended, and figures showing consecutively the number of years spent in each form. Any transfer from one school to another is indicated by a comma if the course of instruction is uninterruptedly continued, or by a fraction sign if the annual term had to be repeated. Transfer to another type of secondary school is indicated by interposing the code letter for the type of school to which the transfer is made. The symbols P and F at the end of the code number show whether the pupil passed or failed the final examination.

The following examples of code numbers illustrate the coding system. Although in practice these code numbers may be much more complicated, the examples given here are simple, in order to avoid confusion and make them more easily understood.

Example 1: 7, SL 1 1 1 1 1 P

Explanation: This pupil attended a primary school for seven years; was subsequently admitted to a secondary school of the literary-economic type; completed each of the five forms in one year, and passed his final examination.

Example 2: 6, L 2 2 SM 3 1 2 F

Explanation: This example evidently refers to a fictional pupil who has great difficulty in keeping up with his classes. He attended a primary school for 6 years; was subsequently admitted to a Lyceum (a secondary school with a modern and a classical division in the higher forms); stayed there 2 years in the lowest form and 2 years in the second form; was subsequently transferred to a secondary school of the mathematical type, where he spent 3 years in the third form, 1 year in the fourth, and 2 years in the fifth or highest form, but then failed to pass his final examination.

It will be appreciated that the data thus collected in the course of several years constitute a wealth of information affording a basis for further statistical analysis, particularly as the Central Bureau of Statistics did not confine itself to the aforementioned "1930 generation," but continued to compile the results of a whole series of consecutive generations, from year to year. The results of this statistical investigation are available to anyone interested.

The initial study was restricted to secondary schools of seven different types. As a further step, information will be compiled for each school separately so that the director of a school will be able to compare the results for his school with the collective figures published for all schools of the same type.

The statistical materials available also afford practical possibilities for compilation of figures relating to schools with special methods of education, such as Dalton schools, Montessori schools, etc., as well as figures for certain districts, various social surroundings, and for pupils of different ages and with different primary school training. Such figures obviously will be of prime importance to those who are responsible for an efficient organization of education.

This description is limited to secondary education, but as related before, the Central Bureau has also collected extensive data concerning university students. The information concerning university education is more or less the same as that available for secondary education, and is derived from the matriculation forms which have to be completed by students. The data thus collected are copied on student cards of more or less the same form as that used for pupils enjoying secondary education.

University matriculants are asked similar questions, such as name, sex, age, certificates obtained, subjects of tuition, ultimate object of study, and father's occupation. For university students, these items are subjected to a special procedure. The fact that practically all these students have attended secondary schools enables the Central Bureau to draw conclusions on the relation between a pupil's record in secondary school and his achievements as a university student.

Finally, mention should be made of the individual pupil cards which are kept for bargemen's children. One percent of the total population of the Netherlands live permanently on the ships which sail the canals and rivers, and it will be understood that the education of the children of this group of the population causes some difficulties. The records of these children are maintained to keep track of the varied course of instruction of these children, who live with their parents in barges which are continually traversing the country and consequently attend different schools, often more then ten different schools in one year. The records show the educational gaps experienced by these children as the result of absenteeism.

It will be clear that statistics like these can give an important impetus to the reorganization of the educational system.

In all their soberness they imply a certain amount of criticism on the existing educational system, and if they are elaborated sufficiently they often yield valuable suggestions for improvement.

Education is a spiritual and cultural affair but ultimately also an economic affair. The laws of economics cannot be neglected permanently in this field.

Résumé

Les statistiques peuvent être d'une grande utilité dans l'enseignement, comme dans toute entreprise, pour contrôler les résultats obtenus. En Hollande, l'enseignement est entièrement placé sous le contrôle direct du Gouvernement et financé par lui. Dans toutes les écoles, communales et confessionnelles, les examens d'entrée sont les mêmes et ont lieu généralement sous la surveillance d'inspecteurs désignés par le Ministère de l'instruction publique.

Le Bureau central de statistique public chaque année des statistiques sur le nombre des écoles, des professeurs et des élèves, ainsi que sur les dépenses afférentes aux divers types d'écoles; ces statistiques sont utilisées par le Ministère de l'instruction publique.

L'importance de ces statistiques est mise en évidence par l'utilisation qui en est faite dans l'étude du problème de la coordination de l'enseignement primaire et de l'enseignement secondaire, ainsi que de problème que posent dans les écoles secondaires et dans les universités les élèves en retard. Elles sont également utiles parce qu'elles font apparaître les frais réels que représente l'instruction, par élève ou étudiant, dans les différents genres d'enseignement.

Sur ce dernier sujet on a entrepris en 1930 la réalisation d'un projet de statistique, qui se poursuit encore actuellement, par le moyen de cartes individuelles faisant état, année par année, des progrès réalisés par chaque élève de l'enseignement secondaire. Les cartes sont remplies par les directeurs d'école qui les renvoient au Bureau central de statistique, lequel les classe et les analyse. Des cartes analogues sont établies pour les étudiants des universités.

Des dossiers spéciaux sont tenus pour les enfants de mariniers qui se déplacent avec leurs parents et changent d'école plus de dix fois souvent en une seule année. Ces dossiers font apparaître les lacunes qui en résultent dans leur éducation, du fait de leurs absences.

A CENSUS OF NINE HSIEN IN SZECHWAN, CHINA

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I. INTRODUCTION

In China today, the taking of a modern census covering the entire country seems difficult, due to shortage of financial and personnel resources. However, experimental work in census-taking on a limited scale has been carried on in recent years. Two censuses, covering nine hsien (counties) in Szechwan Province, were taken during 1942 and 1943, under the joint auspices of the Directorate of Statistics of the National Government and the Provincial Government of Szechwan.

Previously, local censuses had been taken in certain parts of the provinces of Kiangsu, Hopei, Shantung, Fukien, Chekiang, and Yunnan. A brief account will be given of the scope and methods of each investigation, as follows:

1. Census of Shaochi, Kiangsu, March 1932.[1] A census was taken in Shaochi, a town in the county of Kiangyin, in the Province of Kiangsu, jointly by the University of Nanking and the Scripps Foundation for Research in Population Problems. The census was conducted in March 1932 and followed by the registration of vital statistics which was continued from September 1932 till August 1935. This was the first experiment in modern census-taking in China. The term "household" was used to include persons boarding and lodging under the same roof. The items of registration were births, deaths, marriages, and removals.

2. Census of Chuyung, Kiangsu, February 1933.[2] This census of population and agriculture in the county of Chuyung, Kiangsu, was taken by the Commission of National Defense, in conjunction with the local government. The items included in the population schedule were:

(a) The head and members of the family;

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[1] C. M. Chao, W. S. Thompson, D. T. Chen. *An Experiment in the Registration of Vital Statistics in China.* Oxford, Ohio, Scripps Foundation for Research in Population Problems, 1938.

[2] C. C. Chang *et al. Experimental Census of Population and Agriculture of Chuyung Hsien,* Commission of National Defense, 1935 (In Chinese).

(b) Non-family members in the household having no abode of their own;

(c) Those residing in the household temporarily.

The first two items were taken as the main objects for investigation. The completion of the census of Chuyung was not followed by the registration of vital statistics.

3. Census of Kiangning, Kiangsu, October 1933.[3] This census was undertaken by the government of the Kiangning Experimental Hsien. Each person and each family or public institution was represented by a card. The population was classified into:

(a) Those with permanent domicile;

(b) Those staying temporarily in the locality;

(c) Those with permanent domicile but absent at the time of enumeration.

By adding (a) and (c) the *de jure* population was obtained, and by adding (a) and (b) the *de facto* population.

4. Census of Tinghsien, Hopei, September 1934.[4] This census was taken under the guidance and with the encouragement of the Institute for the Promotion of Education. No report of the census was published, and it is known that no registration of vital statistics was carried out.

5. Census of Chowping, Shantung, January 1935.[5] This was undertaken jointly by the Rural Reconstruction Research Institute and the government of the Chowping Experimental Hsien. The population was classified and defined as follows:

(a) Natives, denoting persons with permanent domicile in the locality;

(b) Immigrants, denoting persons from other localities with permanent abode in Chowping;

(c) Temporary residents, denoting persons from other localities without permanent abode in Chowping.

The natives and immigrants, both with permanent domicile, were added to make up the *de jure* population, irrespective of whether they were residing at or absent from the locality. The *de facto* population was made up of the total number of natives and immigrants plus the number of temporary residents and minus the number of natives and immigrants absent from the locality.

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[3] *Census of Population of Kiangning Experimental Hsien in* 1933. Kiangning Hsien Government, 1935 (In Chinese).

[4] Franklin C. H. Lee, "Problems of Technique as Revealed in the Population Census of Tinghsien," *Tsing Hua University Social Science Quarterly*, Vol. II, No. 3, April 1937 (In Chinese).

[5] K. Y. Wu, *Census of Chowping Experimental Hsien.* Shanghai, Chung Hwa Book Co., 1935 (In Chinese).

Four kinds of schedules were used for the enumeration of the population in:

(a) families;
(b) public institutions;
(c) stores and factories;
(d) temples and churches.

After the census, the registration of vital statistics was introduced.

6. *Census of Changlo and other hsien in Fukien, 1935 and 1936.*[6] This census, taken by the Provincial Government of Fukien, covered both population and agriculture in five hsien, namely, Changlo, Lienkiang, Chinkiang, Changtai, and Mingki. The first three hsien were covered in 1935; the other two hsien a year later. The census day in both instances was the lunar New Year's Day. The population was classified by families and public institutions. Partial censuses were later taken in other hsien of the province.

7. *Census of Lanhsi, Chekiang, 1936.*[7] Three separate censuses were taken by the government of the Lanhsi Experimental Hsien in 1934, 1935 and 1936. In the census of 1936, special emphasis was laid on population in relation to land, whereby better results were obtained. Registration of vital statistics was started after the census. Households were divided into four classes, as follows:

(a) families;
(b) boats;
(c) temples;
(d) public institutions.

8. *Census of Chengkung, Yunnan, March 1939.*[8] This census was conducted by the Institute of Census Research of Tsing Hua University. The midnight hour of March 6, 1939, was chosen as the standard time for enumeration. The census was confined to persons permanently residing in the locality.

9. *Census of the Kunming Lake Region of Yunnan, March* 1942.[9] This census was undertaken by the Institute of Census Research of Tsing Hua University, in cooperation with the Ministry of the Interior and

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[6] *Statistical Yearbook of Fukien Province*, Fukien Provincial Government, 1937 (In Chinese).

[7] *Population Statistics and Analysis of Lanhsi Experimental Hsien.* Lanhsi Hsien Government, 1936 (In Chinese).

[8] *Preliminary Report of Population Census of Chengkung, Yunnan,* Institute of Census Research, Tsing Hua University, 1940 (In Chinese).

[9] *Experimental Population Census and Vital Registration in Kunming Lake Region, Yunnan,* Committee on Experimental Census and Vital Registration for Kunming Lake Region, 1944 (In Chinese).

the Yunnan Provincial Government. The Kunming Lake Region includes the city of Kunming and the three hsien of Kunming, Kunyang, and Chining. In the classification of the population, the following standard was adopted:

(a) The population with present abode was divided into natives and non-natives;

(b) The native population was subdivided into natives with present abode and natives absent from the locality.

The foregoing censuses were all conducted in accordance with modern methodology. However, the discrepancies in definitions render any comparison of results difficult, if not impossible.

The census of population in the nine hsien of Szechwan was on a larger scale and better planned than all the previous censuses. The following brief account will give a description of the methods used and results obtained in this recent census.

II: METHODOLOGY

1. Scope and Organization. Two censuses were taken: the first on April 5, 1942, covering three hsien, namely, Penghsien, Shwangliu, and Tsungning; the second on December 23, 1943, covering six hsien, namely, Chengtu, Hwayang, Wenkiang, Pihsien, Sintu, and Sinfan. The nine hsien cover a land area of 4,244.27 square kilometers with a population of 1,829,276 persons.

These censuses were conducted under the control and supervision of a Census Committee composed of members appointed by the Directorate General of Budgets, Accounts, and Statistics and by the Provincial Government of Szechwan. The officials and supervisors for the censuses were selected from these two organizations. A census office was established in each hsien, and its field workers were selected from the staff of the hsien government.

The enumerators were selected from the staff of the various self-government units and from primary school teachers. They were given a week's training and assigned to their posts after examination. Each hsien was divided into several enumeration districts, which were again divided into subdistricts. The headmen of the villages and towns were appointed as chiefs of the districts for administrative purposes, while the detail work was assigned to assistant chiefs selected in the same way as the enumerators. Their work was to scrutinize and check the returns of the preliminary census schedules. The work of the enumerators was to make house-to-house canvassing and recording.

The number of districts and subdistricts in each hsien is as follows:

Hsien	Enumeration Districts	Enumeration Subdistricts
Penghsien	31	561
Shwangliu	16	254
Tsungning	10	166
Chengtu	14	252
Hwayang	35	653
Wenkiang	18	256
Pihsien	21	276
Sintu	14	200
Sinfan	9	153
Total	168	2,771

2. *Definition and Classification.* Equal importance was attached to the enumeration of households and the enumeration of persons. A household was defined to mean a group of persons living together as a unit under a common economic arrangement, the members of which worked or lived in common. The household was divided into three classes:

(a) ordinary household or family;
(b) business household;
(c) public household.

The enumeration of persons was conducted concurrently by the *de jure* and *de facto* methods. The figures of population used in the following tables represent the *de jure* population.

3. *Field work.* The work of the census was divided into two steps, the enumeration of households and the enumeration of persons. The enumeration of households was to be started five days prior to the census day and completed in not more than three days. The enumeration of persons was to be undertaken on the morning after the census day and completed in not more than seven days. As regards those living on boats, enumeration of households and persons was done simultaneously on the night of the census day.

In the enumeration of households, the subdistrict was taken as a unit. During the house-to-house visit, the enumerator posted a bill on each household and filled in the register the household number, its class, and the name of its head, together with other particulars. In the case of public institutions, military establishments, schools, stores, or factories, census schedules were distributed to be filled by themselves. A note to that effect was made on the register. After completion, the registers were handed to the assistant chiefs of the districts to be scrutinized and corrected not later than one day before the census day.

The enumeration of persons was commenced on the morning following the census day. During the enumeration of persons, the enumerator made house-to-house visits in accordance with the register and the census bill posted on the household, and called on the head of each household or his representative to inquire about the particulars of the members of the household. After a schedule had been filled for each family or household, an "enumeration completed" slip was posted on the household below the census bill. The schedules distributed to public institutions, etc., were now collected by the enumerators.

After the completion of a day's work, the enumerator submitted his schedules to the assistant chief of the district for verification. When the necessary corrections were made, the schedules were sent to the census office of the hsien, where they were further scrutinized by hsien supervisors. The hsien office, in turn, submitted the revised schedules together with other tables and records to the Census Committee of the Province. The final checking, compilation and tabulation was done in the office of the Census Committee.

The numbers of provincial and hsien supervisors and assistant chiefs are given in the following table. As one enumerator was assigned to each subdistrict, the number of enumerators was the same as that of subdistricts.

Hsien	No. of Provincial Supervisors	No. of Hsien Supervisors	No. of Assistant Chiefs
Penghsien	4	12	187
Shwangliu	2	5	80
Tsungning	1	3	50
Chengtu	1	5	64
Hwayang	4	11	156
Wenkiang	2	6	65
Pihsien	2	7	59
Sintu	1	4	44
Sinfan	1	3	38
Total	18	56	743

4. Statistical compilation. The method of statistical compilation for the six hsien differed from that for the three. In the case of the three hsien, all the schedules were used in the compilation and tabulation of data; while in the case of the six hsien, only five per cent of the schedules were used. A description of the methods of compilation for the three hsien and for the six hsien follows.

For the three hsien, on receipt of the schedules and registers, the Census Committee began to transcribe all the particulars from the census schedules on two kinds of cards, "household cards" and "person cards". For the person card, white cards were used for males and colored cards for females. In posting, blue ink was used for males and red ink for females. In the process of transcription, household cards preceded person cards, and male cards preceded female cards.

The household cards were grouped by village or town and classified in seven ways according to:

(a) the class of household;
(b) the name of the locality;
(c) the number of persons within each household;
(d) the number of family members in each family;
(e) the occupations (for families with and without business affiliations);
(f) the occupations (for business households);
(g) the nature of public households.

The person cards were classified in nine ways according to:

(a) the class of household;
(b) age groups;
(c) school attendance or non-attendance of children between 6 and 12 years of age;
(d) marital conditions;
(e) literacy;
(f) standard of education;
(g) number of years residing in the hsien;
(h) occupations;
(i) marital conditions of the gainfully employed population.

On completion of classification, the data were transcribed on the working sheets for the compilation of the statistical report.

For the six hsien, the compilation of the statistical data was by a five per cent sampling of the schedules. Upon receipt of the schedules, they were arranged in numerical order, and the 20th, 40th, 60th, and every other 20th schedules were taken out for compilation. The number of families was obtained by counting the number of schedules, one schedule being used for each family. The average size of the family was computed from the sampling data. The estimates of the total population and of the number of persons falling in each group were obtained by the following formulas:

$$(1)\ \text{Total estimated population} = \begin{array}{c}\text{No. of}\\\text{families}\end{array} \times \begin{array}{l}\text{Average size of}\\\text{family for sampl-}\\\text{ing data}\end{array}$$

$$(2)\ \text{No. of persons in each group} = \frac{\begin{array}{c}\text{Total estimated}\\\text{population}\end{array}}{\begin{array}{c}\text{Total No. of}\\\text{persons included}\\\text{in sampling data}\end{array}} \times \begin{array}{l}\text{Absolute No. of}\\\text{persons in each}\\\text{group of sampl-}\\\text{ing data}\end{array}$$

With the single exception of the manufacturing population, the statistical results obtained by compilation of the 5% data bore close resemblance to those of 100% compilations, as shown in the following table:

TABLE 1

Comparison of Statistical Findings of Three Hsien Census (100% Data) and Six Hsien Census (5% Data)

Item	Three Hsien (100% Data)	Six Hsien (5% Data)
1. Average size of family	4.70	4.69
2. Sex ratio at birth	99.24	98.51
3. Sex ratio for all ages	106.91	107.74
4. Age composition (%)		
0–4	14.34	13.89
5–9	12.07	11.69
10–14	11.40	11.16
15–19	6.11	6.76
20–24	4.62	5.14
25–29	5.12	5.22
30–34	6.11	6.53
35–39	6.74	6.40
40–44	5.98	6.26
45–49	6.93	6.51
50–54	6.23	6.00
55–59	4.17	4.23
60–64	3.94	4.03
65–69	2.54	2.49
70–74	2.00	1,93
75 and over	1.67	1.68
Unknown	0.03	0.08
5. Marital condition (%)		
(a) unmarried	47.55	48.82
(b) married	42.50	41.18
(c) widowed	9.65	9.59
(d) divorced	0.17	0.13
(e) unknown	0.13	0.28
6. Condition of literacy (%)		
(a) illiterate	71.99	70.78
(b) literate	27.96	29.04
(c) unknown	0.05	0.18
7. Status of Education (%)		
(a) private tutor	60.13	57.60
(b) primary school	33.48	33.77
(c) middle school	4.56	5.42
(d) college	0.41	0.91
(e) unknown	1.42	2.30
8. Condition of school-age children (%)		
(a) attending school	41.85	42.53
(b) not attending school	58.00	56.87
(c) unknown	0.15	0.60
9. Occupation (%)		
(a) agriculture	57.44	46.30
(b) mining	1.02	0.00
(c) manufacturing	22.16	34.10
(d) building and construction	0.82	0.83
(e) transport and communication	2.96	3.07
(f) commerce	5.25	5.40
(g) hotel & personal service	4.20	5.21
(h) public service	4.94	4.55
(i) unspecified	1.21	0,54

III. STATISTICAL ANALYSIS

1. *Average size of family.* The size of family denotes the number of persons living together as a unit and connected by blood, marriage, or adoption. In the census of the nine hsien the average size of family is found to be 4.69 persons. Sintu gives the highest figure at 5.26; Chengtu the lowest at 4.37. This situation is quite similar to that for other localities covered in the previous censuses (See Table 2).

TABLE 2

Average Size of Family in the Nine Hsien and other Localities

Locality	Average size of family	Locality	Average size of family
Nine Hsien	4.69	Kiangyin(1)	4.70
Penghsien	4.79	Chuyung(2)	4.93
Shwangliu	4.57	Kiangning(3)	4.44
Tsungning	4.55	Lanhsi(4)	4.88
Chengtu	4.37		
Hwayang	4.67	U.S.A.(5)	3.15
Wenkiang	4.65		
Pihsien	4.53		
Sintu	5.26		
Sinfan	4.89		

(1) Kiangyin, *ibid.*, p. 5, Table 1.
(2) Chuyung, *ibid.*, p. 101, Table 1.
(3) Kiangning, *ibid.*, Ch. 4, p. 3.
(4) Lanhsi, *ibid.*, p. 14, Table 11.
(5) *Statistical Abstract of the United States*, 1943, p. 50, Table 45.

2. *Density of population.* By total land area, the average density of population of the nine hsien is 431 persons per square kilometer. Chengtu shows the highest figure, 706 persons per square kilometer; Penghsien the lowest figure, 218 persons per square kilometer (See Tables 3 and 4).

TABLE 3

Density of Population in the Nine Hsien
(On the basis of total land area)

Locality	Population	Area in sq. km.(1)	Persons per sq. km.
Nine Hsien	1,829,276	4,244.27	431
Penghsien	368,868	1,692.17	218
Shwangliu	152,458	287.65	530
Tsungning	94,331	178.35	529
Chengtu	159,642	226.22	706
Hwayang	452,581	933.91	485
Wengkiang	166,937	250.54	666
Pihsien	174,413	273.34	638
Sintu	157,642	243.54	647
Sinfan	102,404	158.55	646

(1) Unpublished statistical report of Szechwan Province, 1944 (submitted to the Directorate General of Budgets, Accounts and Statistics by the Provincial Bureau of Statistics), p. 1, Table 1.

TABLE 4

Density of Population in the Nine Hsien Compared with Certain Foreign Countries

Locality or Country	Persons per sq. km.	Locality or Country	Persons per sq. km.
Nine-Hsien of Szechwan China	431	Denmark	87
Belgium (1)	272	Austria	81
England & Wales	270	Portugal	79
Netherlands (excluding water area)	260	India	79
		France	76
Japan (Proper)	181	Yugoslavia	61
Germany	143	Bulgaria	61
Italy	137	Rumania	59
Czechoslovakia	108	Greece	53
Switzerland	101	Spain	49
Hungary	97	U.S.A. (2)	17
Poland	88		

(1) Figures for all foreign countries except U.S.A. based on data given by R. Pearl. *Natural History of Population*. p. 272, Table 50, converted to square kilometers (1 sq. mi. = 2.5899 sq. km.)
(2) *Statistical Abstract of the United States*, 1943, p. 6, Table 7, converted to sq. km.

If we take only cultivatable land into consideration, the average density for the nine hsien is 1,128 persons per square kilometer. Sintu gives the highest figure, 1,391 persons per square kilometer; Pihsien, the lowest, 822 persons per square kilometer (See Table 5).

TABLE 5

Density of Population in the Nine Hsien (On the basis of cultivable land area)

Locality	Population	Area in sq. km. of cultivable land(1)	Persons per sq. km. of cultivable land
Nine Hsien	1,829,276	1,621.11	1,128
Penghsien	368,868	276.50	1,334
Shwangliu	152,458	153.60	992
Tsungning	94,331	95.30	990
Chengtu	159,642	118.08	1,352
Hwayang	452,581	376.46	1,202
Wenkiang	166,937	172.03	970
Pihsien	174,413	212.01	822
Sintu	157,642	113.33	1,391
Sinfan	102,404	103.80	987

(1) *Statistical Yearbook of Szechwan*, 1941 (Bureau of Reconstruction, Szechwan Province), p. 33, Table 3.

3. *Sex ratio at birth.* The sex ratio for the nine hsien is obtained from the number of infants, male and female, under one year of age. Owing to the high mortality rate among the zero age infants, the sex ratio thus computed does not very accurately reflect the true condition of distribution of males and females at birth. The average sex ratio

at birth in the nine hsien is 98.8. Sintu gives the lowest figure at 84.1; two other hsien fall between 84 and 85. In three hsien, the ratio falls between 101 and 114. The unusually high figure, 183.4, for Chengtu is probably due to errors in reporting the ages of infants (See Table 6).

TABLE 6

Sex Ratio at Birth in Nine Hsien and Other Localities

Locality	Sex Ratio	Locality	Sex Ratio
Nine Hsien	98.8	Kiangyin (1)	125.5
Penghsien	101.3	Chuyung (2)	114.6
Shwangliu	92.1	Kiangning (3)	110.4
Tsungning	102.2	Lanhsi (4)	123.3
Chengtu	183.4	U.S.A. (5)	103.1
Hwayang	84.7	Great Britain (5)	102.7
Wenkiang	84.4	France (5)	102.2
Pihsien	95.4	U.S.S.R. (5)	103.2
Sintu	84.1	Japan (5)	102.6
Sinfan	114.0	Switzerland (5)	104.3
		Brazil (6)	101.7

(1) Kiangyin, *ibid.*, p. 28, Table 17.
(2) Chuyung, *ibid.*, pp. 102-3 Table 4.
(3) Kiangning, *ibid.*, Ch. 4, p. 3.
(4) Lanhsi, *ibid.*, p. 21.
(5) *Statistical Yearbook of the League of Nations*, 1939-40, pp. 24-31, Table 3.
(6) *Statistical Yearbook of the League of Nations*, 1937-38, p. 24, Table 3.

4. *Sex ratio for all ages.* Based on the reports of the nine hsien, the sex ratio for all ages is 107.5, a figure lower than those for other localities in China but higher than that of other countries (See Table 7).

TABLE 7

Sex Ratio for all Ages in the Nine Hsien and Other Localities

Locality	Sex Ratio	Locality	Sex Ratio
Nine Hsien	107.5	Kiangyin (1)	112.1
Penghsien	109.3	Chuyung (2)	114.4
Shwangliu	100.8	Kiangning (3)	117.5
Tsungning	107.9	Lanhsi (4)	125.3
Chengtu	108.5	U.S.A. (5)	100.7
Hwayang	107.2	Great Britain (6)	91.9
Wenkiang	104.4	France (6)	93.4
Pihsien	106.7	U.S.S.R. (6)	93.5
Sintu	110.3	Japan (6)	100.6
Sinfan	112.3		

(1) Kiangyin, *ibid.*, p. 28, Table 17.
(2) Chuyung, *ibid.*, pp. 102-3, Table 4.
(3) Kiangning, *ibid.*, Ch. 3, pp. 7, 9, Tables 4 and 5.
(4) Lanhsi, *ibid.*, p. 21.
(5) *Statistical Abstract of the United States*, 1943, p. 14, Table 14.
(6) *Statistical Yearbook of the League of Nations*, 1939-40 pp. 24-31, Table 3.

5. *Sex ratio by age groups.* The males under 19 years of age outnumber the females in the nine hsien, but they are fewer than the females in the age groups between 20 and 44. There is another higher ratio of males between 45 and 69, and a lower ratio of males aged 70 and above (See Table 8). Since the census of the nine hsien was taken in wartime,

there were probably many cases of falsification of age by those who intended to evade military duties and cases of escape to other places by those whose ages fell within the limits of the Conscription Law. Hence we have some abnormal findings in regard to age (See Tables 8 and 9).

TABLE 8

Sex Ratio by Age Groups in the Nine Hsien and Other Localities

Age Group	*Nine Hsien	Lanhsi (1)	U.S.A. (2)	Great Britain(2)	France (2)	U.S.S.R. (2)	Japan (2)
0–4	104.2	121.6	103.2	102.0	102.3	101.4	102.1
5–9	118.4	130.2	102.5	102.0	102.4	100.4	101.8
10–14	132.5	133.7	102.2	102.0	103.3	102.3	101.8
15–19	104.3	144.5	99.4	99.7	101.4	92.0	101.8
20–24	89.6	135.0	96.4	94.7	103.3	94.5	100.1
25–29	95.2	127.1	97.7	94.3	105.8	72.0	103.9
30–34	89.0	131.2	100.1	88.3	98.5	90.1	105.6
35–39	94.6	125.9	103.3	84.4	82.0	89.6	107.2
40–44	87.8	127.2	107.3	85.7	84.0	95.2	107.9
45–49	128.6	129.8	109.0	86.8	84.3	96.0	104.5
50–54	139.3	117.2	110.1	88.2	88.7	86.8	98.3
55–59	127.7	102.4	109.3	91.3	90.7	81.6	95.4
60–64	104.8	98.7	107.3	88.5	86.6	80.4	90.5
65–69	102.2	86.6					
70–74	81.5	69.0	100.5	75.3	75.0	77.7	74.2
75–79	71.4						
80–84	60.9	55.6					
85–89	38.2						
90–94	56.6	46.2					
95–99	49.1						

(1) Lanhsi, *ibid*., p. 22, Table 15.
(2) *Statistical Yearbook of the League of Nations*, 1939-40, p. 24-31, Table 3.

6. *Age distribution.* Two abnormal phenomena are observed in the age distribution of the population of the nine hsien. The number of infants under one year is unusually small; those in the age groups from 15 to 44 are rather fewer than would be expected, both among males and females (See Table 9).

TABLE 9

Age Composition in the Nine Hsien

Age Group	%	Age Group	%
Under 1 year	1.7	30–34	6.4
1	3.6	35–39	6.5
2	3.0	40–44	6.2
3	3.1	45–49	6.6
4	2.6	50–54	6.1
0–4	14.0	55–59	4.2
5–9	11.8	60–64	4.0
10–14	11.2	65–69	2.5
15–19	6.5	70–74	2.0
20–24	5.0	75 and over	1.7
25–29	5.2	unknown	0.1

The first phenomenon can be explained by the fact that traditional practice in China considers a child one year old during the calendar year in which he is born, thus he attains two years of age on the next lunar New Year's Day. Hence, the statistics for the nine hsien show the number of infants of one year of age exceeding twice those of zero age. Similar inaccuracies exist in regard to the other age groups above one year.

Special attention is drawn to the number of adults reported as of military service age, In the United States Census of 1940, the number of the male population from 20 to 44 years of age constituted 38.4% of the total male population.[10] The census of the nine hsien shows a remarkably low figure for the adult age groups. This is undoubtedly due to the falsification of age in order to evade military service. This deliberate falsification of age is not limited to the male population. As the men declared their ages to be below or above the lower or upper limit of military service, they were led to falsify the ages of their sisters and wives so as to conform to their own falsified reports.

In spite of ingenious methods used by the supervisors to uncover such deception and correct the results, the age distribution of the adult population as obtained by this census is still conspicuously out of proportion. The situation is a product of circumstances, and no blame should be laid on the census work.

On the basis of Sundbaerg's age division, the population of the nine hsien seems fairly uniform, the differences among the hsien being quite insignificant (See Table 10).

TABLE 10

Sundbaerg's Age Division in the Nine Hsien and Other Localities

Locality	Youth (0–14) %	Middle Age (15–49) %	Old Age (50 and over) %
Nine Hsien	37.1	42.4	20.5
Penghsien	38.1	41.3	20.6
Shwangliu	37.5	41.7	20.8
Tsungning	37.0	42.9	20.1
Chengtu	36.0	44.7	19.3
Hwayang	36.4	42.7	20.9
Wenkiang	36.0	42.2	21.8
Pihsien	36.9	43.1	20.0
Sintu	37.8	43.4	18.8
Sinfan	39.2	40.5	20.3
Kiangyin (1)	40.2	46.7	13.1
Chuyung (2)	40.6	47.7	11.7
Kiangning (3)	37.1	50.3	12.6
Lanhsi (4)	36.3	50.2	13.5
Great Britain (5)	23.8	53.5	22.7
U.S.A. (5)	29.4	53.4	17.2
France (5)	22.9	51.6	25.5
U.S.S.R. (5)	36.2	50.8	13.0
Japan (5)	36.9	47.9	15.2

(1) Kiangyin, *ibid.*, p. 24, Table 12.
(2) Chuyung, *ibid.*, p. 104, Table 4.
(3) Kiangning, *ibid.*, Ch. 4, p. 6.
(4) Lanhsi, *ibid.*, p, 33, Table 19.
(5) *Statistical Yearbook of the League of Nations*, 1939-40, pp. 24-31, Table 3.

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[10] *Statistical Abstract of the United States, 1943*, p. 24, Table 22,

7. *Education.* In the nine hsien the number of illiterates is reported to be 71.2% of the total population. As to those who can read, their educational status is as follows: about 5.1% attended middle school; 0.8% college; 33.7% primary school; 58.4% received instruction from private tutors. Of the total population, only 17 in 1,000 had received education above the middle school. The percentage of literate males in the nine hsien is higher than that of literate females, even though the latter compares favorably with other localities in China (See Tables 11 and 12).

TABLE 11

Conditions of Literacy in the Nine Hsien and Other Localities

Locality	Literate Both Sexes %	Literate Male %	Literate Female %	Illiterate Both Sexes %	Illiterate Male %	Illiterate Female %
Nine Hsien	28.7	42.6	13.9	71.3	57.4	86.1
Penghsien	24.8	37.2	11.3	75.2	62.8	88.7
Shwangliu	34.8	49.4	20.0	65.2	50.6	80.0
Tsungning	29.2	43.7	13.5	70.8	56.3	86.5
Chengtu	35.4	48.6	21.0	64.6	51.4	79.0
Hwayang	26.4	40.4	11.5	73.6	59.6	88.5
Wenkiang	27.2	40.1	13.8	72.8	59.9	86.2
Pihsien	33.4	48.2	17.7	66.6	51.8	82.3
Sintu	26.8	42.1	9.9	73.2	57.9	90.1
Sinfan	30.4	46.0	12.8	69.6	54.0	87.2
Kiangyin (1)	11.9	22.3	1.2	87.6	77.6	97.9
Chuyung (2)	27.3	62.2	2.7	72.7	37.8	97.3
Kiangning (3)	15.5	26.8	2.0	84.5	73.2	98.0
Chowping (4)	15.8	30.4	1.3	84.2	69.6	98.7
Chengkung (5)	7.2	14.6	0.6	92.8	85.4	99.4

(1) Kiangyin, *ibid.*, p. 32, Table 19.
(2) Chuyung, *ibid.*, p. 101, Tables 1 and 3.
(3) Kiangning, *ibid.*, Ch. 4, p. 8.
(4) Chowping, *ibid.*, p. 409, Table 62.
(5) Chengkung, *ibid.*, p. 66 Table 26.

TABLE 12

Status of Education in the Nine Hsien

Status of Education	Both Sexes %	Male %	Female %
Total	100.0	100.0	100.0
Private Tutor	58.4	64.5	38.4
Primary School	33.7	28.1	51.9
Middle School	5.1	4.6	7.0
College	0.8	0.8	0.5
Unknown	2.0	2.0	2.2

As to school-age children, with the exception of Shwangliu, Chengtu, and Pihsien, there are more children not attending school than attending. Those attending school average only 42.5% of the total school-age children. More male than female children attend school. Still, the condition of school attendance in the nine hsien is better than in other localities, such as Lanhsi and Chowping, especially in regard to females (See Table 13).

TABLE 13

Condition of School-Age Children in the Nine Hsien and Other Localities

Locality	Attending School: Both Sexes %	Attending School: Male %	Attending School: Female %	Not Attending School: Both Sexes %	Not Attending School: Male %	Not Attending School: Female %
Nine Hsien	42.5	52.3	30.4	57.5	47.7	69.6
Penhgsien	35.4	44.6	23.6	64.6	55.4	76.4
Shwangliu	55.4	65.7	43.1	44.6	34.3	56.9
Tsungning	46.4	55.3	35.1	53.6	44.7	64.9
Chengtu	51.4	60.7	41.0	48.6	39.3	59.0
Hwayang	39.5	49.1	27.3	60.5	50.9	72.7
Wonkiang	38.7	47.1	29.0	61.3	52.9	71.0
Pihsien	51.7	59.7	42.3	48.3	40.3	57.7
Sintu	36.2	50.5	19.1	63.8	49.5	80.9
Sinfan	45.8	58.3	28.9	54.2	41.7	71.1
Chowping (1)	28.9	49.9	7.1	71.1	50.1	92.9
Lanhsi (2)	33.0	47.3	14.4	67.0	52.7	85.6

(1) Chowping, *ibid.*, p. 497, Table 83.
(2) Lanhsi, *ibid.*, p. 64, Table 33.

8. Marriages. In regard to marital conditions in the nine hsien, the unmarried form 48.4% or nearly half of the total population; the married, 41.6%; the widowed and divorced, 9.8%. By sex, the unmarried males constitute 54.9% of the total males; the unmarried females, 41.4% of the total females; whereas the married males constitute 39.2% of the total males, and married females 44.2% of the total females. Thus we see distinctly different marital conditions for males and females. The widowers are 5.3% of the total males; the widows 14.2% of the total females (See Table 14). This is explained by the tradition that it is common practice for a widower to remarry, but for a widow to remarry is considered a humiliation.

TABLE 14

Marital Condition in the Nine Hsien and Lanhsi

Marital Condition	Nine Hsien: Both Sexes %	Nine Hsien: Male %	Nine Hsien: Female %	Lanhsi (1): Both Sexes %	Lanhsi (1): Male %	Lanhsi (1): Female %
Total	100.0	100.0	100.0	100.0	100.0	100.0
Unmarried	48.4	54.9	41.4	49.3	55.9	40.9
Married	41.6	39.2	44.2	42.1	38.4	47.0
Widowed	9.6	5.3	14.2	8.4	5.4	12.1
Divorced	0.2	0.2	0.1	0.2	0.3	..
Unknown	0.2	0.4	0.1	..	..	..

(1) Lanhsi, *ibid.*, p. 38, Table 21.

TABLE 15

Marital Condition of the Marriageable Population in the Nine Hsien

Locality	Unmarried			Married			Widowed			Divorced			Unknown		
	Both Sexes %	Male %	Female %	Both Sexes %	Male %	Female %	Both Sexes %	Male %	Female %	Both Sexes %	Male %	Female %	Both Sexes %	Male %	Female %
Nine Hsien	18.3	26.9	9.5	65.9	63.6	68.3	15.3	8.7	22.0	0.2	0.3	0.1	0.3	0.5	0.1
Penghsien	15.7	24.4	6.7	68.8	66.9	70.7	15.0	8.0	22.4	0.3	0.4	0.1	0.2	0.3	0.1
Shwangliu	16.5	23.4	9.8	66.8	66.9	66.8	16.2	9.0	23.1	0.3	0.5	0.1	0.2	0.2	0.2
Tsungning	16.8	25.7	7.7	66.5	65.3	67.8	16.3	8.4	24.3	0.3	0.5	0.1	0.1	0.1	0.1
Chengtu	21.0	31.3	10.2	63.8	60.1	67.6	14.8	7.9	22.0	0.1	0.2	0.1	0.3	0.5	0.1
Hwayang	18.7	26.6	10.6	65.3	62.3	68.3	15.3	9.7	20.9	0.2	0.4	0.1	0.5	1.0	0.1
Wenkiang	19.3	25.9	12.8	65.8	64.4	67.1	14.5	9.0	19.9	0.3	0.5	0.1	0.1	0.2	0.1
Pihsien	17.9	27.6	8.0	65.3	63.2	67.5	16.5	8.7	24.4	0.2	0.3	0.1	0.1	0.2	—
Siutn	21.8	32.1	10.9	62.7	59.0	66.7	15.0	8.2	22.2	0.1	0.1	—	0.4	0.6	0.2
Sinfan	19.3	29.1	9.2	65.8	62.8	68.8	14.7	7.7	21.9	0.2	0.3	—	—	—	0.1

To study the problem of marriage more logically, only persons of marriageable age should be taken into consideration. Taking those over 15 as of marriageable age, the persons of marriageable age in the nine hsi en who are married are 65.9% ; unmarried, 18.3%. By sex, unmarried males in Sintu constitute 32.1% of all marriageable males—this is the highest figure. The lowest is 23.4%, in Shwangliu. For unmarried females among all marriageable females, Wenkiang gives the highest figure of 12.8%; Penghsien the lowest, 6.7% (See Table 15). Thus we see a higher marriage rate among females than among males.

9. *Occupations.* The classification of occupation in the nine hsien follows the standard set up in 1938 by the Committee of Statistical Experts of the League of Nations. The occupations of the population in the nine hsien are distributed as follows: Agriculture, 49.7% of all the gainfully employed; manufacturing, 30.5%, commerce, 5.4%. All persons in any other individual occupation do not exceed 5% of the total employed. By sex, the males engaged in agriculture form 62.3% of the total employed males; in manufacturing, 11.5%; in commerce, 7.2% ; in public service, 6.2%. The females engaged in manufacturing form 68.9% of the total employed females; in agriculture, 23.2%; in personal service, 4.5%. The high figure for the manufacturing population is due to the fact that under this category there are included inadvertently those doing handicraft work at home or in workshops. (See Table 16).

TABLE 16

Distribution of Occupation in the Nine Hsien

Occupation	Both Sexes %	Male %	Fomale %
Total	100.0	100.0	100.0
Agriculture	49.7	62.8	23.2
Mining	0.3	0.5	..
Manufacturing	30.5	11.5	68.9
Building and Construction	0.8	1.2	..
Transport and Communication	3.0	4.5	..
Hotel and Personal Service	4.9	5.1	4.5
Commerce	5.4	7.2	1.7
Public Services	4.7	6.2	1.5
Unspecified	0.7	1.0	0.2

The unemployed of the nine hsien constitute 53.5% of the total population. This is a reatively low figure, and probably reflects the case with which employment was obtained in wartime. Among the employed the females occupy a smaller percentage, for the undeveloped economic condition, the existence of certain social prejudices and the traditional family system in China still prevent females from taking gainful occupations freely.

TABLE 17

Working and Non-Working Population of the Nine Hsien and other Localities

Locality	Working Population %	Non-Working Population %
Nine Hsien	46.5	53.5
Penghsien	42.0	58.0
Shwangliu	45.5	54.5
Tsungning	34.4	65.6
Chengtu	45.7	54.3
Hwayang	45.6	54.4
Wenkiang	55.4	44.6
Pihsien	50.7	49.3
Sintu	47.7	52.3
Sinfan	57.7	42.3
India (1)	42.5	57.5
Japan (1)	46.0	54.0
United Kingdom (1)	47.0	53.0
France (1)	51.7	48.3
Finland (1)	45.7	54.3
Germany (1)	49.5	50.5
Italy (1)	41.9	58.1
Canada (1)	37.8	62.2
U.S.A. (1)	39.8	60.2

(1) Ta Chen, *Population in Modern China*, p. 117, Table 49.

IV. PROSPECT OF CENSUS-TAKING IN CHINA

The census of the nine hsien exceeded in scale any other local census conducted in the past in China. It is a precursor of future extensive work of modern census-taking in China. Four salient features of this census may be summarized as follows:

1. *The census project.* This consisted of two parts, the first dealing with theoretical discussions, and the second with practical questions of field work. Its object was to give the enumerators a proper understanding of the nature of the work and accustom him with the different steps of the routine, so that the work could be accomplished according to plan with accuracy, expedition, and uniformity.

2. *Local liaison.* Judging by past experience in China, full cooperation in the work of the census could hardly be expected of local administrative bodies if they were more or less disinterested. The census of the nine hsien, by assigning definite responsibilities to local administrative officials, created a new bond of common interest between the Census

Committee and the local administration. Although the amalgamation of the census system with extraneous institutions is generally objected to by census experts, the abnormal situation in China during the war period more than justified an arrangement which linked the census system with the reorganization of the local self-government system.

3. *Two grades of supervisors.* Smooth execution of the work was also helped by the selection of two grades of supervisors. The hsien supervisors supervised the work of the enumerators, scrutinizing the schedules and correcting errors therein. The provincial supervisors checked the work of the hsien supervisors and assumed final responsibility for the work of the enumerators.

4. *Compilation by sampling data.* During the war, the lack of modern equipment for statistical calculation made difficult the work of compilation. In the first part of the census, covering three hsien, the number of schedules amounted to 130,000 and the population under census was over 600,000. The work of compilation, taking 100% of the data, took a staff of 70 members four and a half months to complete. For the second part of the census, covering six hsien, a total of 250,000 census schedules were required and the population under census was estimated to be over 1,200,000. In view of the shortage of funds and of personnel, the 5% sampling method had to be adopted for compilation, which was found quite satisfactory.

Since the conclusion of the war, the Chinese Government has been planning to conduct a national census in 1950. The Population Census Law was promulgated in February 1947, containing revisions in the regulations and rules regarding census-taking. A Bureau of Population has been established within the Ministry of the Interior, with the expressed function of handling the administrative work of registration and census. By law, the Directorate General of Budgets, Accounts, and Statistics is to participate in the work of planning for the coming census and assume the stupendous work of statistical compilation.

These two organs—the Ministry of the Interior and the Directorate General—will thus carry on jointly the work of the national census.

Résumé

Comme exemples de recherches expérimentales en matière de statistique moderne, on peut citer deux recensements effectués en 1942 et 1943 et qui ont porté sur neuf "hsien" de la province du Se-tchouan.

Le travail a été effectué sous la surveillance d'une Commission de recensement nommée à la fois par la direction générale des budgets, comptes et statistiques et par le Gouvernement provincial du Setchouan.

Des détails sont donnés sur la portée et l'organisation du recensement, les définitions et classifications adoptées, la manière dont on a procédé aux enquêtes sur place, et la compilation des données statistiques.

Les résultats du recensement sont brièvement analysés du point de vue des renseignements suivants: importance moyenne de la famille, densité de la population, répartition par âge et par sexe, degré d'instruction, état matrimonial et occupations. Les traits caractéristiques de l'oeuvre accomplie sont résumés en vue du futur recensement de la Chine.

Mention est faite du projet de recensement national en 1950, qui aura lieu sous les auspices du Bureau de la population créé au Ministère de l'intérieur, et avec la collaboration de la Direction générale des budgets, comptes et statistiques.

L'introduction comprend un bref compte rendu des recensements locaux auxquels on a procédé antérieurement en Chine. Une série de tableaux montre les résultats du recensement des neuf "hsien" comparés aux résultats des autres recensement locaux et, dans certains cas, aux résultats obtenus dans les autres pays.

THE ECONOMIC STATISTICS OF LEBANON

by Mustafa Nsouli
Director, Statistical Office (Lebanon)

The last official census of population for Lebanon was taken in 1932. Later, however, during the collection of cereals in 1942, the *Office des Cereales Panifiables* made a general estimate of the Syrian and Lebanese population based on inquiries among local officials. The results were checked by an enumeration of the total population of Lebanon and of the population of the principal Syrian towns, made in December 1942, by means of schedules filled in by the heads of families.

In both these censuses the information demanded was scanty. In the census of 1932, the list of questions was not very detailed, but the results of the census give a complete picture of the population by religion, sex, and locality. Although the information demanded included profession and state of literacy, none of this information appeared in the final results, for the sorting of the schedules neglected these, but mention of them was made on the identity card of every person enumerated. In the O.C.P. Census of 1942, light was thrown on the profession of the persons enumerated and on their nationality.

The 1932 Census was a *de jure* one, for the persons enumerated were allotted to their usual place of residence, whereas the O.C.P. Census was a *de facto* one, for it tabulated them according to where they were actually found at the time of enumeration.

VITAL STATISTICS

Notification of births and deaths is compulsory in Lebanon under Ordinance No. 2851 enacted in 1924. This ordinance requires notification of births, deaths, marriages, and divorces to be made to the district official of the *Etat Civil* Department where the registers of births, deaths, marriages and divorces are kept.

In these towns where there is a district office, the parents of the child or the guardian, physician or mid-wife are required to give notification of births, and the *mukhtar*, or the hospital or jail administrator or the ship's captain is required to give notification of deaths. Husbands, or their fathers, in case the husbands are minors, or their guardians, if the husbands are minors and orphans, are required to give notification of marriages and divorces. In case the husbands are either unwilling or are absent, the religious heads are required to give notification of a marriage or a divorce.

Notification of births, deaths, marriages, and divorces is required to be made to the *Etat Civil* agents in the districts within fifteen days of the event. However, deaths should be declared within 24 hours of the event to the nearest district health office.

In case of a death where the deceased was attended during his last illness by a medical practitioner, a certificate of the cause of death is required to be signed by the practitioner. Owing to the lack of medical practitioners in some of the village areas, a certain proportion of the deaths are not accompanied by such a medical certificate. However, in those towns where there is a district health officer, it is insisted that no burial may take place unless a medical practitioner has certified the death to be from natural causes.

There are 19 district offices in the 19 *cazas*. A summary table is sent from each office agent to the *Etat Civil* Department, which is a service independent of the Statistical Office.

It is important to note that the *Etat Civil* Department does not prepare tables on infant mortality. This is a function of the Statistical Office, which is aware of the importance of the task.

Hospital Statistics. The compilation of statistics of diseases is undertaken by the local health services. The Department of Health compiles governmental hospital statistics. The data collected cover the number of in-patients, out-patients, recoveries, deaths, and number of days spent by the patients in the hospitals. No steps have been taken to collect data from all general and special hospitals.

STATISTICS OF FOREIGN TRADE

Data on foreign trade are compiled by the General Directorate of the Customs. There being no customs barrier between Syria and Lebanon, the figures relate to both countries together and do not exist for each separately.

Figures of imports include special imports and direct transit trade. Those of exports include special exports, re-exports, direct transit trade, and transshipments.

Special imports are goods released for consumption either immediately on arrival from abroad or after being declared as in transit or placed in bond. Special exports include commodities that have been locally produced and also commodities of foreign origin that have been admitted duty free. Re-exports are foreign goods exported with repayment of duty. Direct transit refers to goods passing through the States (Syria and Lebanon) from one foreign country to another and to goods sent abroad from bond or from an inland customs station.

A number of institutions in Lebanon are entitled to the duty-free import of commodities which they use; the chief institutions are the Government, religious and charitable organizations, and consular offices.

The value of the imports represents the cost, insurance, and freight as shown on the invoice and home consumption entries by merchants at the time of clearance and as subsequently checked by customs officials. Imports are classified according to countries of origin. The value of exports represents the cost and the charges of delivering the goods on board the export carrier, as declared by the exporters or as assessed by the customs officials if either the value declared or the invoice presented is considered to be incorrect.

Exports are credited to the countries of destination declared at the time of exportation. These countries are not, in all cases, the countries of ultimate consumption, since goods may be resold on arrival and shipped to another country.

Re-exports are classified by countries of destination declared at the time of re-exportation.

Transit trade is classified by importing and exporting countries.

Since 1935 the nomenclature used by the Customs has been that recommended by the League of Nations in 1931.

PRODUCTION STATISTICS

Agriculture. In 1943 the Statistical Office in the Ministry of National Economy undertook the task of conducting an agricultural census. Until that time the Department of Agriculture had no data on the distribution and utilization of land; area, output, and yield of principal crops; areas and categories of woods and forests; output of forestry products; livestock statistics; output of animal products; sericulture; etc. Forms were prepared to include such information, and arrangements were made so that the census sheets are distributed among the *mukhtars* to be filled with the aid of two responsible persons in each village.

It is interesting to point out that the result was very unreliable because of the newness of such a measure and because of the ignorance of the *mukhtar* in most cases, and we had to abandon this method and adopt a totally different one. The next two years, the Statistical Office and the Department of Agriculture agreed on collecting the necessary information by forming a commission to visit the various districts and make contact with the agricultural societies together with the agricultural engineers, in order to obtain, as much as possible, first-hand data. This method, though not a very efficient one, had better results and it provided us with fairly good estimates.

It is interesting to add that in Lebanon livestock are estimated in two ways. The Department of Agriculture receives estimates from its agents and those estimates are checked by comparison with the figures obtained by the Ministry of Finance from the animal tax. There is also a law, not yet in effect, for taxing land according to its use. When that law comes into force it should be easy to discover what land is used for grazing and to estimate the number of animals on it.

In 1942 and 1943, the *Office des Cereales Panifiables* made complete surveys of the cultivation and output of food grains—wheat, barley, maize, and sorghum. In 1942, information was collected for each village; in 1943, it was obtained for each farm in Lebanon and each village in Syria.

Industry. An experimental industrial census was carried out in 1943, by sending out census sheets to various factories in Lebanon. The result was not satisfactory for most of the industrialists were afraid of disclosing information lest the Government should use it in assessing the "war benefits tax." Moreover, the public in Lebanon is not yet accustomed to statistical methods and hence it does not cooperate.

The Office of Statistics, however, produces industrial statistics by estimation and by what is supplied to it by the Ministry of Finance. Data on production of food commodities, textiles, and leather are obtained yearly by inquiries and with the aid of the appropriate local officials. Statistics of commodities subject to taxation are supplied by the Ministry of Finance, such as match, alcohol, alcoholic beverages, cement and salt. For other industries, such as electricity, transport, petrol and its by-products, information is obtained from the companies controlled by the Government.

GENERAL ECONOMIC STATISTICS

Price statistics. Retail prices of 18 commodities of prime necessity and general wholesale prices are collected weekly in Beirut.

Retail price indices. Monthly indices of retail prices of the 18 commodities of prime necessity are calculated for Beirut. The base period is August 1938 - July 1939. The indices are weighted according to the consumption of an average family of five persons.

Wholesale price indices. A monthly index of Beirut wholesale prices is calculated. The index is based on weekly quotations in the main markets covering 58 basic commodities, and are weighted according to the amount of each commodity annually produced or consumed in Lebanon. The base period is June 1939. Separate indices are also calculated for foodstuffs, raw materials, fuel, manufactured goods, and building materials.

Cost-of-living indices. A monthly cost-of-living index is also calculated for an average family of five persons of the middle class living in Beirut. The base period covers June, July and August 1939. The family budget is divided into five main items, *viz.*,

1) Food
2) Housing and Water
3) Light and Fuel
4) Clothing
5) Miscellaneous

Under the last item are included the income tax, expenditures on servants, on cigarettes, transportation, medical treatment, educational fees, etc. The index is calculated by dividing the average monthly expenditures of each month by the average monthly expenditures during the base period. Expenditures are calculated according to the quantities of goods that the typical family consumes and according to the prices ruling in Beirut. Controlled prices and free and black market prices are taken into consideration in calculating the cost-of-living index. As to the quantities consumed, an inquiry was carried out by the Office of Statistics to determine them.

Method of Calculation. In calculating the various indices the Statistical Office follows the aggregative method.

Financial Statistics. The Office of Statistics compiles figures on various financial topics, as follows:

State budgets, municipal budgets, currency circulation, rates of exchange, gold prices, stocks and share prices, bank advances and deposits, transactions of the *Chambre de Compensation*, agricultural and industrial loans.

The Office, in addition, computes index numbers for currency circulation, gold prices, and stocks and share prices.

PUBLICATIONS

The Office of Statistics in the Ministry of National Economy publishes a weekly bulletin of prices. Last year it issued for the first time since its foundation in 1943, a half-yearly handbook, covering the first semester of 1946 and including data for 1945 and previous years. This publication is intended to be made a yearly abstract, and is issued in Arabic and French.

Besides these publications, the Directorate General of the Customs publishes annually Foreign Trade Statistics of Syria and Lebanon. An annual statistical handbook for Syria and Lebanon is published by the statistical department in the Superior Council of Common Interests for the two States.

Résumé

Le dernier recensement officiel de la population du Liban a été fait en 1932. L'Office des céréales panifiables a procédé, en 1942, à une estimation générale de la population syrienne et libanaise, vérifiée par un dénombrement partiel. L'enregistrement des naissances, des décès, des mariages et des divorces a été rendu obligatoire par un décret de 1924 et est effectué par le Bureau de l'état-civil.

Les statistiques du commerce extérieur, relatives à la Syrie et au Liban réunis, sont établies par la Direction générale des douanes, qui emploie la nomenclature recommandée par la Société des Nations.

On a constaté qu'un recensement agricole fait en 1943 a donné des résultats douteux. Le Bureau de statistiques et le Ministère de l'agriculture sont en train d'essayer une nouvelle méthode pour obtenir des données de première main sur la production agricole. L'Office des céréales panifiables a procédé, en 1942 et 1943, à des études sur la culture et la production des céréales.

Un recensement industriel, fait à titre d'essai en 1943, a également donné des résultats peu satisfaisants. Les évaluations de la production industrielle sont établies par le Bureau de statistiques, à l'aide de données fournies par le Ministère des finances et par des entreprises placées sous le contrôle de l'Etat.

Les prix de gros et de détail relevés chaque semaine à Beyrouth servent à calculer les indices mensuels, en prenant l'année 1939 comme période de base. Un indice mensuel du coût de la vie est également calculé pour une famille de cinq personnes appartenant à la classe moyenne et habitant Beyrouth.

Le Bureau de statistiques publie un bulletin hebdomadaire des prix, ainsi qu'un résumé annuel en langue arabe et en langue française. La Direction générale des douanes publie chaque année, les statistiques du commerce extérieur de la Syrie et du Liban. Enfin, le Conseil supérieur des intérêts communs pour les deux Etats publie également un recueil annuel statistiques.

RECENT DEVELOPMENT IN INDIAN OFFICIAL STATISTICS

by S. Subramanian

Statistician to the Economic Adviser, Government of India

Indian statistics date back to a period at least as old as the ancient Greeks, but the more recent history may be said to have commenced in the early sixties of the nineteenth century with the setting up in 1862 of a Statistical Committee charged with the preparation of model statistical forms. This was followed by the appointment, in 1869, of the first Director General of Statistics, whose task was to produce a comprehensive " Statistical Survey " of the entire country. Later landmarks in the development of Indian statistics werethe conference on agricultural statistics in 1884, the inauguration in 1904 of a system of wholesale and retail price indices, the creation in 1905 of a Statistical Bureau, the appointment of a Director of Statistics in 1914, the discontinuance in 1923 of wage statistics as a measure of retrenchment, the Report of the Economic Enquiry Committee of 1925, the Royal Commissions on Agriculture and Labor of 1928 and 1930 respectively and, lastly, the Bowley-Robertson Report of 1934.

A great mass of statistical material was thus being collected as a result of the recommendations of the various expert committees, but the outbreak of the war in 1939 revealed the inadequacy of the existing statistics, particularly with reference to the requirements arising from the new responsibilities assumed by the Government in both the military and civilian spheres of activity. Departments of the Government had perforce to undertake, at very short notice, new schemes for the collection of essential information. A few of the more important of these developments are described below.

AGRICULTURAL OUTPUT

Statistics of agricultural area in India are complicated by the existence of the so-called permanently settled areas in the Provinces, estimates for which are not wholly reliable owing to the lack of a suitable reporting agency, and non-reporting areas in Indian States forming as much as two-fifths of the total area of the States. Very recently two of the Provinces which lacked a village revenue organization have made successful efforts to set up the necessary machinery for the purpose. Some useful estimates have also been obtained in respect of non-reporting Indian States, although the degree of their reliability has to be examined carefully.

The accuracy of the output figures continues to be questioned, but, thanks to the sustained efforts of the Statistical Branch of the Indian Council of Agricultural Research, the various commodity committees attached to the latter Council, and the unofficial Indian Statistical Institute, a new technique of crop estimation based on a scientific system of sampling has been evolved and is now under trial over almost the entire area of the Indian Provinces. It has, however, not been found possible so far to pay adequate attention in this respect to the States owing to the large volume of work already thrown on the Indian Agricultural Council, but it is hoped that at least the premier States will be covered in the near future.

The results furnished by the sample surveys are expected to improve greatly the periodic forecasts for the principal crops now being issued for the benefit of the commercial public. These forecasts cover about a dozen crops comprising food grains, oilseeds, textile fibers, and sugar cane. Of these, till recently, food grains were limited to rice and wheat, but, in response to a general demand for more comprehensive food statistics, forecasts for two important millets, jowar and bajra, were inaugurated last year.

ANIMAL HUSBANDRY

Serial statistics are not yet available in regard to dairy and poultry products, *e.g.*, milk, eggs, wool, hides, and skins, but *ad hoc* enquiries on the subject were completed and the result published recently by the Agricultural Marketing Organization. A beginning has also been made in the matter of fishery statistics.

INDUSTRIAL PRODUCTION

Statistics relating to cotton manufacturing have been in compilation, under statutory powers, for more than twenty years now. Output statistics for a dozen other industries are also collected every month, but except in the case of four of these which are governed by the Excise Duties Act, the information is furnished by the industrial units on a purely voluntary basis. With a view to improving the degree of completeness and accuracy of these returns, legislation was enacted in 1942 covering, with certain exceptions, factories employing at least twenty persons and using power.

A census of manufacturing industries for the year 1946 is now in progress in about thirty industries, and this number will be supplemented by another thirty-five in the near future. Standard forms in which the returns are asked for are accompanied by a full set of instructions, and arrangements have been made by the Director of Industrial Statistics for personal elucidation of difficult points when necessary. Adequate precautions have also been taken to prevent unauthorized disclosure of information furnished by individual units.

It is held, however, that existing powers are still inadequate for various essential purposes and the question of enacting a comprehensive Statistics Act is under consideration.

HOUSING AND BUILDING CONSTRUCTION

An effort has been made recently to collect quarterly statistics of the number and value of building contracts placed through the Public Works Departments. It is also proposed to supplement these by statistics of urban building activity, *e.g.*, the amount of floor space taken up by new buildings, obtained from local bodies such as municipalities and city improvement trusts, but it is too early yet to say when the project will be finalized.

TRADE

There has been an insistent demand that foreign trade statistics should be based on trade descriptions of commodities rather than on tariff heads as at present. This may not be practicable as a general proposition, but a proposal is under consideration for the setting up of an expert committee to suggest ways and means of bringing the trade and tariff classifications into closer relation with each other and of ensuring a fair degree of standardization from the international point of view.

Proposals are also under discussion for the initiation, on a sampling basis, of statistics relating to retail trading.

EMPLOYMENT

Annual figures of employment in the larger factories and mines have been compiled for a long period, and arrangements are being made for an eventual enumeration of the numbers employed every quarter. There has also been a suggestion for a complete census of the gainfully employed population more frequently than once in ten years.

FUEL AND POWER

Ample statistical information has been available for a considerable period in the case of coal. Statistics in similar detail relating to electrical energy were not compiled before the war, but consequent on the appointment of a Special Commissioner for electricity during the war, these statistics have also been put on a systematic basis.

CENSUS AND VITAL STATISTICS

A number of proposals have been made by the Health Survey and Development Committee which reported recently, the most important among these being the setting up of a Registrar General's Organization which should also take over the Census of Population.

PRICES

During the war a system of retail price statistics for rural centers was initiated. Much progress has also been made by the Labor Bureau in the matter of compilation, on a uniform basis, of working class cost-of-living index numbers for important industrial centers. A random sample inquiry into the family budgets of Central Government employees has also been completed and it is hoped to issue shortly a series of price indices based on the inquiry.

A revised and comprehensive index of wholesale prices comprising nearly 250 items, covering foodstuffs, industrial raw materials, semi-manufactures, and finished goods, has recently been completed and the figures are released to the public every week.

WAGES

During the war, a great deal of information on the subject was recovered from statutory returns received under the Payment of Wages Act which covers all earners receiving less than Rs. 200 per month. These statistics are now published in the *Indian Labor Gazette*. *Ad hoc* wage censuses were also undertaken by the Labor Investigation Committee which reported recently. While the available material is not yet suitable for the compilation of an index, it is hoped that a beginning will soon be made with an index of urban industrial wage rates.

BALANCE OF PAYMENTS

The Reserve Bank of India has under active consideration proposals for the compilation of these estimates on a uniform basis in consultation with the International Monetary Fund.

NATIONAL INCOME

No official estimate of the national income has so far been framed owing to lack of the necessary organization, but arising from the recommendations of the Inter-Departmental Committee on Official statistics which reported last year, the Government of India have under consideration the setting up of suitable machinery for the purpose,

ORGANIZATION

During the war, the major Provinces have set up new Statistical Offices or strengthened them where they were already in existence. This is a very welcome development for, under Indian conditions, the bulk of the primary statistics needs must remain the responsibility of Provincial Governments. Most of the larger States have already established Statistical Offices, but it will be some time before the minor States can report any advance in this direction.

At the Center, during the war, in addition to the Statistical Bureau (located at Calcutta), which was functioning as a Central Compilation Office, the various Government Departments set up their own statistical branches and these have now become, for all practicable purposes, completely independent of one another. As a result, there has become noticeable a considerable amount of overlapping, while at the same time an important field like national income is not covered at all. Measures toward the remedying of these defects are now under discussion.

This account of the recent statistical activities of the Government of India has necessarily to be kept within a brief compass but fuller details will be available in the volumes of the *Guide to Indian Official Statistics* and the Report of the Inter-Departmental Committee on Official Statistics.

Résumé

Il est possible de retracer les étapes du développement des statistiques de l'Inde dès la création, en 1862, d'un comité de statistiques. Les nécessités du temps de guerre et les besoins du Gouvernement aprés 1939 ont révélé l'insuffisance des statistiques existantes. On trouvera ci-après quelques-uns des développements les plus importants entraînés par les conditions de guerre.

Dans le domaine des statistiques agricoles, on fait actuellement l'essai, dans presque toutes les Provinces de l'Inde, d'une nouvelle méthode de sondage pour l'évaluation des récoltes, et cette méthode sera appliquée dans les Etats aussitôt que possible. Afin d'améliorer les statistiques en matière de production industrielle, une loi a été votée en 1942 concernant les usines qui emploient au moins vingt ouvriers et qui font usage de la force motrice.

On signale d'autres réalisations: projets et propositions dans le domaine des statistiques relatives aux questions suivantes; logement et

construction, commerce, emploi, combustibles et force motrice, recensement et démographie, prix, salaires, balance des paiements et revenu national.

En ce qui concerne l'organisation, la plupart des grands Etats ont créé des bureaux de statistiques. Outre le Bureau de statistiques de Calcutta, qui fait office de bureau central de compilation, le Gouvernement a créé dans divers ministères des services de statistiques pratiquement indépendants les uns des autres. On étudie actuellement des mesures pour remédier aux chevauchements, ou aux lacunes existant dans certaines fonctions.

On trouvera dans le guide des statistiques officielles de l'Inde (*Guide to Indian Official Statistics*) et dans le rapport du Comité interministériel des statistiques officielles (*Inter-Departmental Committee on Official Statistics*) des détails sur les activités du Gouvernement de l'Inde en matière de statistiques.

Discussion

After the presentation of the reports, the CHAIRMAN opened the meeting for discussion.

Mr. DORE (FAO) asked Mr. Cohn (1) if he collected information on the proportion of cereals and vegetables used for human and for animal consumption, and (2) on the method of sampling used in his sampling surveys.

The CHAIRMAN supplemented the last question with another on the kinds of sampling errors involved and the degree of precision found in his sampling surveys.

Mr. COHN replied that the proportion of food used for human and for animal consumption could be obtained from data showing the amount of grains processed into flour. In regard to the method of the sampling survey, he explained that the 1,400 rural communities in his country were divided into five groups of about 300 communities each, the groups so chosen as to represent all kinds of distributions of area, number of livestock and other characteristics. Questions were asked of every farmer in the sample group. There had been no attempt to calculate the margin of error, but the results had been found satisfactory when checked with the total yearly census.

The CHAIRMAN commented on the report of Mr. Idenburg and remarked how an auditing of an educational system could be carried out by such an assessment of progress of individual students. He asked Mr. Idenburg what implications this procedure had had in the shaping of educational policy in his country.

Mr. IDENBURG in reply referred to the fact that less than 50 per cent of the pupils of the secondary schools were found able to complete their course in the five years planned for them. He hoped that the publication of such facts would lead the educational administrators to make the necessary adaptions in their educational policy.

Mr. W. CORDELL (U.S.) asked Mr. Idenburg if the type of record he described constituted a complete count of all students in his country, and what was the total number of students involved.

Mr. IDENBURG replied that the number was approximately 50,000.

Mr. CORDELL mentioned that there were about 30 million youths of school age in the United States, and that it would be mechanically impossible for a central bureau to have a file of individual cards for each child. In his opinion it would be politically better to leave in the hands of state and local educational authorities the responsibility for making decisions based upon statistics of this type. In addition, he had found in his experience that it took so long to get the statistics on the numbers and types of students needed as basis for action that other methods had to be relied on, such as the application of the sampling method.

Mr. IDENBURG recognized the difficulties one would have in a country like the United States and agreed that the use of the sampling method would be best in such circumstances.

The CHAIRMAN considered that the most important point in Mr. Idenburg's report was the need of proper cost accounting of the educational system of a country as a whole. Before adjournment of the meeting he announced that those members of the Congress who desired the formation of small group meetings during the Conferences for the exchange of information on the statistical activities of different countries could communicate with Mr. Bruce of the United Nations Statistical Office.

INTERNATIONAL COMPARABILITY OF STATISTICS

Thursday, September 11, at 2:00 p.m.

CHAIRMAN:

Herbert Marshall

Member from Canada and Chairman, Statistical Commission of the Economic and Social Council

The CHAIRMAN introduced the following speaker:

THE DEVELOPMENT OF INTERNATIONAL COMPARABILITY OF STATISTICS

by William R. Leonard
Acting Director
Statistical Office of the United Nations

The problem of securing comparability of statistics is as old and as familiar as the history of man's ability to count things. It occurs in one form or another at every stage in the processes of collecting, compiling, and analyzing statistical data, in every attempt to measure or classify social and economic phenomena. Even the simplest statistical series involves questions of definition and classification which must be treated uniformly to permit accurate interpretation of the figures. Whether we seek to learn a simple fact such as the price of a given quantity of grain or the amount of rainfall in a certain area, or to measure a complex set of factors such as the standard of living of the working population or international balances of payments, we encounter problems of comparability among different sets of figures, and even among individual components of a single series.

These problems of comparability are not peculiar to international comparisons, but arise constantly in the collection and use of statistics within a particular country. Many of you have experienced difficulties, for example, in assembling comparable statistics because of different practices in the classification of types of economic activity. Classifications used by different offices or ministries of a government may not be similar for a variety of reasons. It then becomes necessary, if comparable statistics are to be secured, for agreement to be reached among the offices concerned to adopt a single classification and to apply uniform definitions. It may, on occasion, be necessary to construct a wholly new system, arrived at by a series of compromises. The problem of classifying types of economic activity is only one instance of the problem of securing comparability in the national statistics of a given country.

I do not intend to outline the history of efforts to deal with problems of international comparability, especially before such a group as this one where so many of you have contributed generously to the accomplishments that have been achieved so far. I wish, however, to refer briefly to some aspects of this history as a background against which to consider the status of work in this field and possible lines of future development. I hope that the subject, if not my treatment of it, will stimulate further discussion at this meeting, because I am sure that the greatest progress toward international comparability of statistics comes from such opportunities as this World Statistical Congress provides for exchange of views and information among the economists, statisticians, government officials, scholars, and experts of different countries.

In any discussion of efforts to deal with problems of comparability it seems to me important to distinguish carefully between purely national problems and the more complex questions of international comparability which are the subject of this paper. The development of standards and comparability of statistics within individual countries has emerged from a series of compromises arrived at in many instances under compulsion of circumstances which could not be avoided and even on occasion through resort to legislative or administrative authority. In other cases solutions to problems of comparability have been found through reorganization or consolidation of national statistical services. Many of the administrative resources and legal instruments available in the solution of national problems, of course, are altogether lacking in the existing system of international organization. Furthermore, the homogeneity which generally exists within a particular country as to language, customs, types of economic activity, units of weight and measure, and currency makes it unnecessary to deal on a national basis with a host of questions which bring up or multiply the difficulties of international comparability.

Viewed from this general standpoint the fifty or more countries with statistical systems of a more or less highly developed character cannot in fact be regarded as "one statistical world," but as fifty or more statistical worlds where painstaking efforts must be made to achieve comparability in concepts, classifications, definitions, and technical statistical methods of all kinds.

Such efforts to secure international comparability of statistics have been made over a long period of years through many different avenues of approach. In modern times nearly every important international conference has had to deal in one way or another with questions of international comparability of statistics. Prior to the First World War, the more significant efforts in this field were limited, in the main, to conferences and other types of joint action among relatively small groups of countries bound together by ties of common allegiance, geographical proximity, or common economic interests. Among the notable examples of this type of action may be mentioned the conferences of British Empire statisticians and the arrangements for consultation among the chief statistical officers of the Scandinavian countries.

The British Empire conferences in particular represent an outstanding experiment in concerted action toward improvement of comparability in the statistics of different political and geographic areas. The accomplishments of these conferences in respect to a wide range of questions are evident today in the statistical programs of all parts of the British Empire.

The Scandinavian experience has been equally fruitful and perhaps even more interesting in certain respects. Beginning in the years before World War I, more or less informal arrangements were made for annual meetings of the heads of the statistical offices of Denmark, Finland, Norway and Sweden to discuss problems of mutual interest. These conferences have taken up such questions as the development of a uniform classification of branches of economic activity for use by the Scandinavian countries, the adoption of a common base year, standards for the compilation of comparable statistics of national income, and many other matters of common concern. In later years attention was given to standards for measurement of wages in different industries and to other kinds of labor statistics needed in connection with proposals for a joint labor market among the four countries.

The work of the International Statistical Institute, particularly in the field of demographic statistics, represents an outstanding example of cooperative action which was not limited in scope to a few countries. Perhaps largely as a result of this work, advancement of international comparability of statistics of population, births and deaths, as well as other demographic measures, has progressed more rapidly than in many other fields.

The Institute also contributed, although less extensively, to the development of international comparability in other fields of social and economic statistics.

In the field of agricultural statistics the International Institute of Agriculture did notable work in improvement and coordination of national statistics on crops and livestock, as well as through its encouragement of world censuses of agriculture. It also undertook many special activities in particular aspects of agricultural statistics. Among these may be mentioned, for example, the study which it made in collaboration with the International Statistical Institute on standard classifications and definitions for forestry statistics; research projects with a view to improvement of fruit and vegetable statistics; studies on classification of livestock by age, sex, and use; and studies in the field of index numbers of the prices of agricultural products.

The first united efforts to provide for international comparability of statistics on a large scale in a wide range of subject fields developed with the establishment of the League of Nations and the International Labor Organization after the First World War. The work of the ILO, of course, was devoted to problems in the field of labor statistics, embracing primarily such subjects as wages and earnings, employment and unemployment, industrial injuries, and cost of living. The work of the permanent secretariat of the ILO, and the conferences of labor statisticians held from time to time under the auspices of the ILO, have resulted in very important contributions to the development of international comparability of labor statistics. I allude only briefly to this record of accomplishment because it is well known to all of you. The important work of the ILO has assumed special significance because of the increasing emphasis now being placed by many governments upon the maintenance of full employment. As statistics are used in connection with public policy on matters of this kind, it is more and more necessary that comparability exist.

During the same period of years the League of Nations was responsible for achievements of inestimable significance in the development of international comparability of statistics. Merely to recite a list of these accomplishments would require more time than is available for this meeting. I shall therefore touch only briefly on some of the highlights of this experience giving emphasis to those aspects which are now of most direct concern to the statisticians of the world.

Perhaps the most important single concrete result of the work of the League of Nations in this field was the development and adoption of the *International Convention Relating to Economic Statistics* and the *Final Act* of the International Conference Relating to Economic Statistics which was held in Geneva in 1928. The 1928 *Convention*, which was brought into force in twenty-six countries and is still a legally effective instrument, constitutes a landmark in the history of international cooperation on statistical matters, as it was the first major attempt to deal with problems of international comparability of statistics directly through formal treaty action. The countries adhering to the *Convention* undertook specific obligations with respect to collection and publication of statistics according to specifications agreed upon and set out in detail in the *Convention* itself and in its Annexes. Some countries, while not formally adopting the *Convention*, nevertheless carried out its general terms. The United States was one such country; and it, by the way, was also represented on the Committee of Statistical Experts by a distinguished statistician who served throughout the period of the Committee's activities.

Going beyond the provisions of the *Convention*, the *Final Act* of the 1928 Conference contained resolutions and recommendations directed toward continued improvement and extension in scope of national statistics and further steps in securing their international comparability.

In addition to laying down a minimum program of economic statistics, the 1928 *Convention* provided for the appointment of a Committee of Statistical Experts and defined its mandate as one of studying and making plans for further development of the programs launched by the Conference. The Committee, as is well known, held regular meetings in the period from 1931 to 1939 and made regular reports to the League Council. With the aid of a number of subcommittees which did most of the preliminary work, the Committee of Statistical Experts brought to completion prior to the outbreak of war in 1939 a series of "Studies and Reports on Statistical Methods" which contained recommendations on standards of comparability in statistics of the gainfully-occupied population, international trade, timber, capital formation and housing, and indices of industrial production. In addition, it formulated recommendations on a wide range of other topics, including mining and metallurgical statistics, tourist statistics, and many others.

At the outbreak of war the Committee was engaged in study of problems of banking statistics, balance of payments statistics, construction statistics, price indices, and related price statistics. It had also planned to take up study of problems of national income statistics, industrial censuses and current production statistics, and statistics of raw material stocks and production of electric energy. Although this program of work was cut short by the war, the subcommittees found it possible to continue study in the fields of national income, balance of payments, and banking statistics, on all of which reports were completed in draft form. The Statistical Commission of the United Nations has taken cognizance of these studies, and their publication by the United Nations has been arranged.

I should not conclude this brief discussion of examples of past efforts to deal with problems of international comparability of statistics without at least mentioning the work which has been done during the war by the Inter American Statistical Institute. This organization has undertaken an ambitious program of work, about which you will learn in some detail at the meetings of the Institute. In particular, reference should be made to the work that the Institute has undertaken on international trade statistics and on population censuses of the American nations, including its developmental work in connection with plans for the censuses to be taken by countries of the Western Hemisphere around 1950, and the preparation of a convertibility index for foreign trade statistical classifications of the American nations.

The results of all these and many other steps which have been taken in prior years toward the development of international comparability of statistics constitute in a sense the heritage on which the United Nations and the Specialized Agencies must build for future progress, in cooperation with the national governments and other international organizations. Standards of comparability already reached must be maintained and introduced among as many countries as possible; in other cases work remains to be advanced that was left by the force of circumstances at a stage short of completion. In still other cases, new problems requiring the consideration of standards of comparability will no doubt arise. We shall never reach a point where we can say that our work is done; the most we can hope is to be able to say that we are keeping abreast of the needs.

Fortunately the needs for unremitting effort in this field were recognized from the outset in planning the organizational structure of the United Nations, and—once established—the organization set in motion at once steps to consolidate the progress which had been made previously and to gain further ground more rapidly. Among the several commissions of the Economic and Social Council which were appointed at the first opportunity, the Statistical Commission was one of the first to meet and begin consideration of substantive problems. At the very first session of the nuclear Statistical Commission, in May 1946, action was taken to assure maintenance of the "valuable statistical work of the Economic, Financial and Transit Department of the League of Nations and of other statistical activities carried on under the sponsorship of the League"; to give recognition to the important contributions made by other international organizations to the improvement of world statistics; and to initiate new efforts looking to the formulation of standards concerning statistical methods, concepts, definitions, and other factors associated with the achievement of international comparability of statistics.

The pattern of work laid out for the Statistical Office by the Statistical Commission at its first and subsequent sessions has progressed at different rates in different subject fields, in accordance with the availability of resources with which to carry on the work and the relative urgency of the particular problems demanding attention in each case, and with due regard for the work being done in the same field by other organizations.

Work on improvement of international comparability of statistics of national income, for example, has had to be undertaken and pushed ahead relatively rapidly for immediate administrative purposes of the United Nations and the Specialized Agencies. Some of the results of this work will be presented at this Congress in a paper by Mr. Derksen. Intensive efforts are being made to assemble and analyze available statistics of all countries on national income, and the concepts, methods of collection and calculation, and other factors affecting the interpretation of the national income statistics of each country and their comparability with those of other countries. This work carries forward the previous efforts of the Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts, under the chairmanship of Mr. Richard Stone of the United Kingdom, described in its draft report on the "Measurement of National Income and the Construction of Social Accounts." The task ahead involves the formulation and acceptance of uniform concepts and definitions, as well as encouragement and assistance in improving the basic statistical series available in different countries which must be used in constructing comparable income estimates. Further work is needed also to develop uniform classifications in order to permit international comparisons of separate components of aggregate national income figures, as, for example, breakdown of the total by population and industry groups, separate data on consumer income, and the like. These tasks will require the active cooperation of economists and statisticians in many fields and many countries. The Statistical Office of the United Nations can serve as the central clearinghouse for exchange of information on methods and techniques of income statistics and thus facilitate pooling of skills and experience, and it can and will take the initiative in efforts to reach agreement on standards and concepts, but it has no magic formula by which to provide statistics where they are lacking.

Closely related to this work in the field of national income is the effort being devoted to improvement of national balance of payments statistics. Here again, the foundation work of a subcommittee of the League's Committee of Statistical Experts is being utilized, particularly in connection with the development of a uniform system of classification of international accounts. The work in this field provides an example of collaboration between the Statistical Office of the United Nations and another intergovernmental agency—in this case the International Monetary Fund—which has a direct and specialized interest in the subject. The division of responsibility for different phases of the work in this field recognizes the special and direct administrative needs of the Fund and the unusual technical resources which it has available for this work, while at the same time reflecting the compelling need for coordination with related activities in such fields as national income and external trade, in which the Statistical Office of the United Nations or other Specialized Agencies have primary responsibilities.

One of the fields in which the greatest progress toward improvement of international comparability of statistics was made in the period between the two world wars is the development of statistics of international trade. Reference has already been made to the gains made through the 1928 *International Convention Relating to Economic Statistics*, by which adhering countries undertook, "in order to facilitate comparison of the statistics of external trade of different countries," to comply with specific standards governing such factors as methods of valuation of imports and exports, exclusion of transit trade from statistics of external trade, definitions of units of weight and measure, and other details affecting comparability of the data. In accordance with the terms of the *Convention*, the Committee of Statistical Experts subsequently developed a minimum list of countries to be distinguished in foreign trade statistics, which was widely adopted and is still generally observed in practice by a number of countries. The Committee also developed a minimum list of commodities for international trade statistics which was adopted by some thirty countries. and a further list of about sixty commodities for which import statistics are made available by actual country of origin. Despite the progress made under the 1928 *Convention* and through other efforts independent of the machinery established by the *Convention*, available statistics of international trade are seriously lacking in comparability in a number of important particulars and much remains to be done to improve both the adequacy and the reliability of data in this field.

The critical situation existing in many countries as a result of shortage of foreign exchange and the urgent needs for and dependence upon an increased volume of exports and imports to permit essential reconstruction and rehabilitation and to promote more stable economic systems are among the factors which give the utmost importance now to the efforts to maintain and expand comparability of world trade statistics. General agreement on standards for the compilation and publication of statistics of external trade is still essential, but agreement on general principles is not sufficient for the volume of detailed and precise current information to be required as a basis for effective action in dealing with world problems. National governments themselves, in the application of controls over external trade, need more precisely than in the past the particulars concerning their own exports and imports as well as comparable information for other countries. We must have exact knowledge of the meaning of each country's figures on external trade—what items are included and excluded in a given classification; how these items are defined; how the valuations are arrived at, including methods of converting foreign currencies and how they compare with the methods used by other countries; whether and to what extent such elements as insurance, freight and other services are counted; and a host of other details about the methods and concepts used.

In short, we can no longer be satisfied with knowledge of what probably happens according to certain assumptions, but need to know what actually happens in the movement of goods and services in world trade. This knowledge can only be acquired through the most painstaking efforts continued from day to day, and with the most active cooperation of national governments and international organizations. The Statistical Office of the United Nations is devoting an increasing share of its total resources to this effort on a continuing, day-to-day basis, through correspondence with national governments, consultation with the Specialized Agencies, intensive study and analysis of all available statistics and information concerning these statistics, and in many other ways. I am hopeful that the results of this work will be more and more evident in the tables which we publish in the *Monthly Bulletin of Statistics*, the *Supplement to the Bulletin* which is now being compiled, the statistical yearbook which we hope to make available in the near future, and in other published materials. as well as in the advice and information provided very extensively in answer to special inquiries from many countries and organizations.

Closely related to the work being done on statistics of external trade is the task of promoting the development of better and more comparable statistics of industrial production. Pioneer work was done in this field by the League of Nations, particularly in the development of indices of industrial production. As one result of this work, a great many countries now publish statistical series at regular intervals, most often monthly, showing the level of industrial activity of the more representative branches of production. The needs in this field today, however, are vastly greater and more complex. The scope of internationally comparable statistics of industrial production must be extended to cover a wide range of economic activity and provide more detailed information on particular products and industries; uniform classification systems must be developed and expanded to permit more precise and detailed analysis of statistics on industrial production in relation to trade statistics; and greatly accelerated efforts must be made to achieve more general agreement on the composition, periodicity, methods of calculation and other factors applicable to the compilation of statistics of industrial production in different countries.

The Statistical Office of the United Nations, in consultation with experts of national governments and the Specialized Agencies, is undertaking an intensive study and analysis of the more important national indices of industrial production, and is accumulating a considerable body of knowledge about their composition, with a view toward possible steps to improve their comparability and the technical adequacy of such indices in general. One such step will obviously be acceleration in the exchange of information among different countries on the composition and methodology of such indices. Efforts will be made likewise to formulate standards applicable to such indices covering the technical questions already mentioned.

Our efforts in this field, of course, must be concerned not only with over-all statistics of industrial production but also with basic measures of economic activity in a large number of specific fields. In the field of transport, for example, although much progress has been made toward uniformity in statistics of merchant shipping, available data on rail and air traffic are seriously lacking in comparability. Measures of construction activity are also far from satisfactory as to their international comparability; and agreement is lacking on appropriate units of measurement even among countries which have well developed statistics on this subject. Likewise, in basic statistics of production of metals and minerals much remains to be done in securing uniformity in such factors as reporting of metal content of ores and in reaching agreement on the stage of production at which output is measured.

Basic to almost all efforts to improve international comparability of statistics is the work being done to develop uniform systems of classification. Perhaps of most immediate interest among the many problems receiving attention in this area is the proposal for a standard classification of types of economic activity. Under the direction of the Statistical Commission, and with the aid of a special Committee on Industrial Classification, steps have been taken to institute a long-range, comprehensive program on this problem. The objective here is to develop a generally acceptable scheme of classification for use by all countries in statistics of all branches of economic activity, so that all compilations or groupings of data pertaining, for instance, to manufacturing industry, will conform to the same basic pattern in distinguishing different segments of the industry and in defining the industry itself. The proposed classification will be designed to be used for censuses of population as well as for censuses of manufacturing, trade and other broad fields of economic activity.

In considering the work to be done in continuing efforts to secure the highest possible degree of comparability, I must emphasize the importance of the Specialized Agencies in their particular fields. The International Labor Office, the FAO, WHO, ICAO and the International Monetary Fund are all actively participating in the development of international standards; several other Specialized Agencies are interested in these problems and will no doubt make important contributions toward their solution.

Finally, I want to emphasize two special circumstances which must be taken into account in the work of an international statistical agency in dealing with problems of comparability, and to seek your future indulgence in those instances in which these circumstances may create what appear to be unreasonable demands upon your national statistical systems or may limit the value to your country of the services which the international agency seeks to provide.

In the first place, it should always be borne in mind that it is almost never possible to devise a common plan for collection of statistics on a given subject that fits readily into the statistical systems of all countries. In connection with even the simplest statistical series, numerous situations arise which are unique to one country or another and which must be taken into account in the collection and presentation of statistics for different countries.

Secondly, it must be remembered that neither the United Nations nor any of the Specialized Agencies, except in certain highly special circumstances, collects original statistics, but must obtain the statistics which it uses and makes available from the individual national statistical systems.

These two circumstances condition both the requests which the United Nations makes of national governments and the quality of the statistics which it makes available. In some degree, similar circumstances may obtain even within a country in the collection of statistics for purely national purposes. Within any one country, however, as I mentioned earlier, there exist possibilities of arbitration and resources of authority which are not available to the United Nations or to other international organizations now in existence. Problems facing international agencies in improving comparability of statistics must be solved through compromise. In many instances the best compromise available is likely to mean either limitations on the quality and comparability of the data collected or demands upon national statistical systems for supplementary data which are not obtained in their regular collections of statistics.

The task of developing international comparability of statistics may seem staggering, viewed in the light of the magnitude of our problems and the limitations on the resources available for their solution. We cannot, however, avoid the problems by refusing to face them, and I am confident that if the statisticians of all countries will face them together, we shall be able to keep pace with the requirements of the times. We must continue to work together, or we shall not only fail in our common purposes but be handicapped in our ability to cope even with our strictly national and individual problems. Each of us individually and each unit in the system of national and international organization for statistics has a part to play and a responsibility to bear in this work. We in the Statistical Office of the United Nations are conscious of our responsibility and our role, but we are conscious also that we cannot succeed without your help. We look to you individually as well as through your national governments and through your representatives on the Statistical Commission, to point the way for further progress on our common problems. We look to you for help in interpreting the statistics of your country in order to evaluate their comparability with the statistics of other countries. Most of all we look to you for the kind of help that you alone can give in finding solutions to our common problems through wise leadership, sound planning, and competent administration of your own national statistical programs in such a way as to provide for your country the quantity and quality of statistical information needed for concerted action in dealing with international social and economic problems.

Now, if ever, is the time to undertake such a program. Tremendous advances were made during the war in many countries in the development of governmental machinery and other economic and social institutions to deal with national as well as international problems. The war also witnessed the emergence in most countries of new national needs for statistics for economic planning. War-born necessity mothered the invention of new statistical techniques, and greatly stimulated development of methods of forecasting and of estimation. Throughout the world statistical systems and organizations are now undergoing changes to adapt to new conditions and new requirements at a faster pace than ever before. What better time could there be to take advantage of the experience of other countries in improving the statistics of your own country? What better opportunity shall we have to get in step with each other than the opportunity which now confronts us in a period of rapid adjustment of national statistical systems to new conditions? Now, if ever, is the time and here is the opportunity for coordinated action by all countries to make statistics comparable from country to country, and thus to achieve through statistics a truly universal medium of communication.

I do not wish to leave you with the impression that I am naive enough to believe that we can solve all our problems at once or in the immediate future. Problems of international comparability of statistics will always exist. By their very nature they need continuous attention on a day-to-day basis. But in the Statistical Office of the United Nations we have an organization covering the whole general field of statistics, with interests and responsibilities covering almost all subject fields in greater or lesser degree, and with an operating staff that can deal with these problems of comparability on a day-to-day basis. That organization can function effectively, however, only within a framework of general agreement on guiding principles, concepts and standards, and only with your continued cooperation in supplying the materials with which to work.

Résumé

Les problèmes que pose la comparabilité internationale des statistiques diffèrent des problèmes qui se posent à l'échelle nationale tant par leur complexité que par leur difficulté. Parmi les efforts déployés pour obtenir la comparabilité internationale des statistiques, l'auteur cite les expériences faites par les statisticiens de l'Empire britannique et par les directeurs des offices de statistiques des pays scandinaves.

L'auteur rappelle les travaux de l'Institut international de statistique, de l'Institut international d'agriculture, de la Société des Nations et de l'Organisation internationale du Travail. Il attache une importance particulière à l'adoption de la *Convention internationale concernant les statistique economiques* et à l'*Act final* de la Conférence de Genève de 1928 ainsi qu'à l'achèvement d'une série d'"Etudes et rapports sur les méthodes statistiques" par le Comité d'experts statisticiens de la Société des Nations. L'auteur mentionne également les travaux de l'Institut interaméricain de statistique sur les statistiques du commerce international et sur les recensements des pays américains.

L'auteur rend compte des travaux entrepris par le Bureau de statistique des Nations Unies dans les domaines du revenu national, de la balance des paiements, du commerce international et de la production industrielle, et en ce qui concerne le projet d'adoption d'une classification type des catégories d'activité économique. Il souligne l'importance du rôle joué par les institutions spécialisées dans le développement des normes internationales ayant trait à leur domaine.

L'auteur signale deux circonstances particulières qui déterminent la nature des demandes adressées aux divers gouvernements par l'Organisation des Nations Unies ainsi que la qualité des statistiques qu'elle fournit. Il estime que par suite, des besoins nés de la guerre, les circonstances sont favorables, à l'heure actuelle, à l'action coordonnée de tous les pays en vue de rendre les statistiques comparables sur le plan international et d'en faire un moyen de communication réellement universel entre les hommes.

Discussion

Mr. SUBRAMANIAN (India) requested clarification on two points: (1) Whether collection of statistics on balance of payments was to be done by the International Monetary Fund rather than by each country itself as heretofore; (2) If the Economic and Social Council could request Member Governments to carry out their national censuses in 1950 if possible. In connection with the latter point, he mentioned as an example that India was planning a census in 1951, and wondered if the date might be advanced one year in order to have comparable figures with other countries.

Mr. POLAK (Fund) in reply to the first question pointed out the impossibility for the Fund to draw up balance of payments statistics for each country, but stated that the Fund was preparing a scheme for reporting which would facilitate international comparability of balance of payments statistics.

The CHAIRMAN explained, in answer to the second question, that the Statistical Commission in its recent session had recommended that the Economic and Social Council request Member Governments to cooperate if possible in the 1950 census.

There being no further discussion, the meeting was adjourned.

INTERNATIONAL DEMOGRAPHIC STATISTICS AND POPULATION PROBLEMS

Friday, September 12, at 9:30 a.m.

CHAIRMAN:

Alberto Arca-Parro'

Member from Peru and Chairman, Population Commission of the Economic and Social Council

The CHAIRMAN, in introducing the two speakers on the programme of the meeting, commented on the importance of the topics to be presented and mentioned trends in population policies of countries in the Western Hemisphere. He cited the Santa Fe declaration and the United Nations Charter in regard to international cooperation for the welfare of the peoples of the world, and called attention to the existence in the United Nations of technical organs to facilitate such cooperation, specifically the Population Commission and the Statistical Commission of the Economic and Social Council.

THE DEVELOPMENT OF INTERNATIONAL DEMOGRAPHIC STATISTICS

by Forrest E. Linder

Chief, Population and Vital Statistics Section, Statistical Office of the United Nations

The world is full of people. They are born, they live as a part of the world's population, a population in constant flux regarding its size, distribution, and characteristics. Finally they die. There is no need to belabor the point that the world's problems, and the world's progress are vitally related to this dynamic entity—the world's population. Likewise there is no need to belabor the point that the understanding of the world's problems, be they economic or social, always must rest upon a background knowledge of how, and how many, people are being born, living and dying.

The recognition of the universal need for demographic data is no new phenomenon. The long and fruitful work of the International Statistical Institute and the League of Nations in this field is proof of the fact that, especially in Europe, demographic facts have long been considered essential for international as well as national purposes. In more recent years the needs for demographic data have been strongly expressed among the American nations. The Eighth American Scientific Congress, the Eleventh Pan American Sanitary Conference, the First Inter-American Conference on Social Security and the First Inter-American Demographic Congress are only some of the recent American conferences which adopted resolutions and recommendations calling for improved population and vital statistics. The vigorous program of the Inter American Statistical Institute reflects this same interest.

In view of the ever-increasing activities of the national governments in statistical work, and the constant efforts of various intergovernmental and professional organizations in the field of demographic statistics, it might be well to ask what new influence or impetus can be added by the United Nations.

To those directly concerned with the compilation or use of population statistics it is a source of satisfaction that the United Nations took early recognition of the importance of all types of statistics, and particularly of demographic statistics. The Statistical Commission was established with broad terms of reference relating to the collection, improvement, standardization and dissemination of statistical data in all statistical fields including population and vital statistics. In addition to this, the Economic and Social Council, requiring advice and assistance on matters effecting or affected by population changes, established a special commission for population. This Population Commission is to arrange for studies and advise the Council on:

(a) Population changes, the factors associated with such changes, and the policies designed to influence the factors;

(b) Interrelationships of economic and social conditions and population trends;

(c) Migratory movements of population and factors associated with such movements; and

(d) Any other population problems on which the principal or subsidiary organs of the United Nations or the Specialized Agencies may seek advice.

Corresponding roughly to the interests of these two Commissions, there have been established in the United Nations Secretariat two complementary units concerned with population matters. One of these is the Population and Vital Statistics Section of the Statistical Office. This section is concerned primarily with problems of collection, improvement, standardization, and distribution of data. The other unit, the Population Division of the Department of Social Affairs, has full responsibility for the analysis and interpretation of population data in economic and social terms. Although located in separate departments of the Secretariat, these two offices are working closely together to further their mutual interest in adequate population data and analyses. In addition to these offices in the Secretariat, several of the Specialized Agencies have interests in various aspects of population and vital statistics and are actively working in this field. Together these offices, working in cooperation, form the most extensive international organization ever to be concerned with the problems of demographic statistics.

The effective utilization of this international machinery as a new path of progress for demographic statistics depends upon a clarification and a sharpening of our concept of the kinds of data that are needed and the kinds of advances that can be made. It is easy to paint a picture of what the world would want: a utopia of figures—current, complete, accurate, and comparable—but this is too general. The first basic task must be to survey every aspect of the field, to determine precisely what data are needed, which of these are available and which lacking, which are satisfactory and which are most deficient in quality or precision of definition. Such a study would become a reference point from which to measure progress, and would reveal the problems to be attacked.

Without doubt, the first and most basic obligation of the Statistical Office is to assemble a complete file of the most recent and authoritative population figures for every primary political unit in the world. At first glance, the work of compiling such a file seems a simple task, but in addition to the figure itself, the source must be given; it must be indicated whether it is a *de jure* or *de facto* figure; the precise area covered must be known; it must be stated if it is an enumerated or estimated figure and if certain classes of the population are excluded; the date of the year to which the figure relates must be known and it must be determined if and in what manner the most recent figure differs from the previous figures.

Even a superficial survey of the needs for population data of the United Nations, the Specialized Agencies and other organizations which turn to the United Nations for data, shows that a file of simple population totals is merely a beginning. In the field of population, more than one international agency has expressed the need for distributions by sex and age, by marital condition, race, nationality, urban-rural and other characteristics. Data on the labor force are needed by sex and age, occupation, industry and class of worker. A surprising number of agencies require detailed statistics on international migration.

In the related field of vital statistics, birth and death data in considerable detail are basic to analysis of trends of population totals and composition. Touching the more social fields of health and welfare there is demand for infant mortality and cause-of-death figures, and for marriage and divorce statistics. A central file of information of this type would become a cornerstone of all demographic work of the United Nations and the Specialized Agencies. The collection and maintenance of an extensive file of such data for all of the areas of the world is an endless task, but it is one that must be performed successfully if the Statistical Office is to serve satisfactorily the existing and future needs for international statistics.

But even a complete file would fail in its function if methods for distributing the material were not concurrently established.

The *Monthly Bulletin of Statistics* is one medium by which this material can be distributed. At the present time the *Bulletin* publishes total population trends for fifty-eight countries or areas and total birth, death, and infant mortality figures for approximately thirty-five areas. As reliable and current data become available the demographic presentation in the *Bulletin* will be expanded and improved. It is recognized, however, that some other method for the distribution of current demographic data will have to be devised, since up-to-date population figures are required for many more areas than can be shown in the *Bulletin*.

More important as a future medium of distribution for detailed data is the yearbook of demographic statistics which is now being planned by the United Nations. The preparation of plans for such a yearbook was requested by the Economic and Social Council at its Fourth Session on the basis of resolutions of both the Statistical and Population Commissions recognizing the need for extensive demographic data.

The plan for the contents and character of the yearbook is being made on the assumption that this publication is to be the central international source of demographic data. As such, the yearbook must serve the purpose of a general source book giving basic data in considerable detail together with accurate and adequate explanatory notes. At the same time, the volume must serve as a reference book containing readily interpretable rates, ratios, and comparable data series.

The general outline of contents has been drafted with the following considerations in view:

(a) To gain acceptance and support the compilation must be made with the highest possible scientific standards and must be designed to fit the broad purposes of the United Nations, the Specialized Agencies, national governments, and scientific research agencies, rather than the narrow and specialized interests of any one group. This means that the contents must be designed so that the coverage is extensive, with the necessary limitation of data to totals, important marginal distributions, and summary figures, rather than a coverage restricted to a few major subjects treated in elaborate detail.

(b) The plan for the yearbook must be kept flexible, particularly in the early numbers, partly as a matter of economy in distributing the initial work load, and partly because the difficulties encountered in reestablishing statistical work in many countries as a result of the war will not permit full development for several years.

(c) In the early stages of work on the first issue, the outline of contents must be considered as tentative since the final contents will be partly determined by such considerations as availability of comparable data and space limitations. These factors become determined only as the work progresses.

(d) Certain types of data should be considered for publication in the demographic yearbook even though the same or similar tables are published elsewhere. Some duplication of published tables is desirable since each separate publication will be distributed to a different group of users. Duplication of published data does not imply duplication of collection or processing.

(e) As an economy measure, the publication of materials in the yearbook will be scheduled in such a way that each major subject is covered at least once over a period of five or ten years, but only the most essential data and current series will be shown in every issue.

In terms of contents, the yearbook ultimately will have major sections on population, households and families, labor force, international migration, natality, mortality, morbidity, and marriage and divorce. The statistical data presented in the yearbook will be supplemented by certain technical information such as subject indexes, bibliography of major sources of national official statistics, technical explanations of methods, and footnotes giving details of areas covered and other information essential for accurate definition of data given.

The development of the yearbook to the desired high technical level is a work which will require many years. Moreover, the yearbook must be developed in close accord with other national and international efforts for the improvement of data. While tied to a certain extent to data which are available at present, the yearbook should also be a positive force in encouraging the adoption of standard definitions, methods, and procedures. The yearbook tables could be progressively modified in order to indicate international agreements which may be reached on classifications, definitions, and related matters.

The gradual construction of adequate and comparable tables of data must be based on careful research into the quality of the basic data available, agreement on standards to improve the quality of such data, and upon technical and mathematical treatment of original data. In all work of adjustment or evaluation of data close cooperation will be maintained with the statistical organizations of the various countries, and they will be relied upon as far as possible for descriptions and appraisals of basic data, adjustments, and estimates.

The procedure for compilation of the yearbook material will be designed to minimize the demands made upon the national statistical offices. The method now being planned provides for the preparation of standard table forms for each country. Data for these tables will be compiled from available official sources by the United Nations insofar as possible. The compilations will then be sent to the various national statistical offices for verification, completion and approval. In general the material requested for each country will be basic raw data, rather than percentage distributions, rates, and ratios. These latter items will usually be computed centrally.

The second aspect of the program of the Statistical Office in the demographic field relates to the promotion of standard definitions, classifications, and computation methods. A professional audience will not need to be convinced that the first result of an attempt to compile an extensive file of international data will be the discovery that there is great variation in the type and quality of the data compiled by the separate nations. It remains the constant duty of both national and international statisticians to work for the elimination of these differences and for the persistent improvement of quality. The United Nations can play its part in this task by providing a medium through which the national statisticians can work to reach agreement on acceptable and practicable standards and methods.

In the population field we still lack agreement on the meaning of "urban-rural"; it remains practically impossible to compile internationally comparable occupational and industry tables; the classifications of race, nationality, and related terms, adapted as they have been to the individual needs of each national census, present an unmanageable heterogeneity when viewed internationally.

In the field of birth statistics, the completeness of registration is not always adequately known or measured, and there are major differences between countries in the definitions and practices which distinguish between live and stillbirths. In this field too, greater uniformity in the detail of cross-classification of births by age of mother and birth order would help in an understanding of the true meaning of rapidly changing birth rates.

Mortality statistics represent one of the most highly developed statistical fields. Yet here also are grave deficiencies and problems. In parts of Asia, Africa, and America, particularly, the interpretation of death rates is hazardous because of inadequate levels of registration completeness. The problem of classification of the causes of death in order to obtain international comparability is by no means solved.

International effort in this field over more than ninety years has resulted in general agreement on an international classification which is revised decennially to keep pace with medical thinking. But there still is little international uniformity in the theory and practices by which the cause to be tabulated is selected from the intricate syndrome of causes usually present at death and recorded on certificates of death.

Even if the methods of classification were theoretically perfected, the adequate tabulation of causes of death is dependent upon accurate medical certification of these causes, and this in turn is a function of the level of the whole economic and social life of the country. True, these basic factors affecting medical statistics are not within the competence of the Statistical Office, but there does remain the problem of determining the significance of these differences as they affect international comparisons of mortality statistics.

The infant mortality rate is one of the vital statistics indices of wide interest and use. Varying enormously between countries, it is often regarded as one of the most sensitive indices of social welfare. Yet it is perhaps subject to more important differences in compilation than any other measure. It is affected by under-registration in either numerator or denominator, and by differences in the definition of a live birth, stillbirth or infant death. And, for current figures especially, there is no uniform procedure for adjusting the infant mortality rate for rapid changes in the birth rate.

In the development of standards two important points should be emphasized. These problems and needs have long been recognized. National and international agencies have struggled with them for decades. The Statistical Office of the United Nations has no panacea to offer. In the first place, only that can be accomplished which arises from the requirements and potentialities of the national statistical offices. No international agency can do more than provide a machine by which these responsible agencies can effectively cooperate. The second point is that many of these problems of compilation and standardization are of particular interest to the Specialized Agencies and to the professional societies. In such cases the Statistical Office will work in cooperation with such agencies and societies.

The third phase of the future program of the Statistical Office in demographic statistics is one in which a central international agency can be especially helpful to the national offices. This is in the summarization and exchange of information on the organization, programs, and methods of national statistical offices. This function is illustrated by the recent resolution of the Population and Statistical

Commissions regarding national censuses. This resolution requested the Secretariat, in effect, to keep informed on the census plans of member nations and provide for an exchange of information on these plans.

On the basis of this resolution the United Nations has written to the national statistical offices asking for detailed information, schedules, and instructions on the most recent population census in each country. Information was also requested on plans for the next census. When replies have been received from most countries summaries will be made showing the items included in the schedules, the definition of major items and the general procedures by which the enumeration was made.

It is expected that similar studies will be made of the sources by which other statistics of the demographic type are collected. Such studies giving facts about the systems in use, the coverage, methods, and definitions will form a useful basis for evaluating the comparability and validity of statistics. Publication of these surveys will give any country access to information on the statistical systems and methods of other countries.

These activities relating to the exchange of information can potentially develop into one of the most useful functions of the Statistical Office. The fund of information collected can become a source valuable to any national agency wishing information on new census and registration procedures used in other countries, and can initiate a more direct exchange of scientific information between specialists in all parts of the world.

An ultimate development could well be that the Secretariat staff would be adequate so that expert advice and assistance could be made available to nations wishing specialized information on operational or theoretical problems.

This outline of a demographic program for the United Nations Secretariat may seem large and ambitious. Seen in its proper perspective it is not out of proportion, since the many tasks to be done must be shared by many agencies at different levels of government. The problems of improvement and analysis of demographic statistics are of concern to almost every level of governmental organization. Progress toward the desirable goal of universally comparable demographic statistics depends upon a realization of the different responsibilities and interests of the numerous governmental units which contribute to the production of those statistics. In any country, the city or municipality, the state or province, and the national government each has an essential and distinctive responsibility in the net of collecting organizations and each in turn has its own distinctive uses and needs for the records and data it has helped collect. Beyond the scope of national governments, those professional and official organizations concerned with international problems have a contribution to make to, and a real interest in, world demographic statistics.

The fact that each unit in the governmental hierarchy, from the smallest town to the most inclusive international organization, has an interest in demographic statistics is no indication that these interests are the same. The smaller units of government need and can produce intensive and detailed analyses of local data. The work of each larger governmental unit becomes successively more extensive and correspondingly less intensive. The city statistical office can make detailed studies of local data, interpreting these with a direct knowledge of pertinent local conditions. The state or provincial statistical office can make more extensive analyses, based on consolidated data for a larger area. But to the degree that the state or provincial totals are a consolidation of heterogeneous data, or that comparisons involved noncomparable areas, the possibility of precise analysis is lost. Similarly, the work of national agencies loses in detail and validity as much as it gains in scope and generality. In the international field the extensity of interest is so great and the data under consideration are so heterogeneous that it is difficult to make even the vaguest conclusion or the most general comparison.

The responsibilities and opportunities for the improvement of demographic data parallel exactly these possibilities for analyses. Although the contributions and requirements of each unit in the statistical organization are different, they are by no means independent. Each unit within a state or province has a legitimate interest in the work of the state or provincial statistical office. Each provincial statistician has a legitimate concern and responsibility with the problems of national collection, because the actions or recommendations of a national agency may or may not make available data for other areas which the state needs for comparative studies. Each national government has a responsibility to partake in and contribute to those international activities which have world-wide comparability of demographic statistics as their ultimate goal.

When every governmental unit contributes to, and in turn is dependent upon, a statistical collection system, is it too much to hope that ultimately we shall have an integrated and coordinated world demographic statistics system?—and that then, the elusive goal of "comparability" will become somewhat more of a reality?

The work of the Statistical Office of the United Nations in particular rests heavily on the separate national statistical offices. It is not too much to say that there is no hope or future for international demographic statistics except that which is given by the vigor of national statistical growth.

A quick inspection of existing demographic data can lead to a mood of deep pessimism. For a large proportion of the world's population no accurate data exist. Even among countries with elaborate statistical organizations there is no uniformity of definition, classification, or quality of data.

Viewed with a longer range, our pessimism can vanish. Never before has there been such a universal recognition of the utility of accurate demographic data. The science and theory of statistics are progressing at a rapid pace and the number of trained and experienced statisticians was never greater. The need for a comprehensive registration system for the collection of vital statistics would be denied by no country in this present age of interest in public health and population growth. A mere glance at the census history of most of the member countries of the United Nations will show an ever-increasing frequency and adequacy of population censuses.

Over a period of a year or two progress seems slow and one becomes impatient. Viewed over a century we become amazed at the advances in demographic science.

And not by eastern windows only,
When daylight comes, comes in the light;
In front, the sun climbs slow, how slowly,
But westward look, the land is bright.

- Clough -

Résumé

La travail effectué dans le domaine des statistiques démographiques par l'Institut international de statistique et par la Société des Nations prouve que l'on a reconnu la nécessité de ces statistiques. Une autre preuve en est l'intérêt que les pays américains ont témoigné pour ces questions au cours de ces dernières années.

Le Secretariat des Nations Unies a créé deux services complémentaires pour s'occuper des questions de population, la section des statistiques démographiques du Bureau de statistique et la Division de la

population du Département des affaires sociales. La première s'intéresse particulièrement au rassemblement, au perfectionnement, à la normalisation et à la publication des statistiques. La seconde est chargée d'analyser les statistiques démographiques et de les interpréter du point de vue économique et du point de vue social.

Dans le domaine démographique, le Bureau de statistique a pour tâches: 1) de rassembler une documentation complète sur les statistiques démographiques les plus récentes et les plus dignes de foi, provenant de toutes les entités politiques de base du monde; 2) de travailler à la normalisation des définitions, des classifications et des méthodes d'évaluation; 3) d'échanger des renseignements sur l'organisation, les programmes et les méthodes des bureaux nationaux de statistique.

On peut considérer ce programme comme en partie réalisé par la publication de statistiques démographiques dans le *Bulletin mensuel de statistique*, par la publication, actuellement envisagée, d'un annuaire démographique et par une récente résolution adoptée par la Commission de la population et par la Commission de statistique au sujet des recensements nationaux.

Les gouvernements nationaux, ainsi que les organisations professionnelles et officielles qui s'intéressent aux problèmes internationaux sont instamment priés de faire tout leur possible et de ne rien négliger pour assurer la comparabilité, sur le plan mondial, des données des statistiques démographiques.

THE ANALYSIS OF INTERNATIONAL POPULATION PROBLEMS

by Frank W. Notestein

Consultant, Population Division, Department of Social Affairs of the United Nations

The primary purpose of this paper is to consider the work and plans of the United Nations in the analysis of international population problems. However, as a background to that discussion, it may be well to indicate some of the ways in which the social analyst in general, and the demographer in particular, can contribute to international understanding.

It is necessary first of all to disclaim the view that knowledge alone will save the world. The converse is all too obviously true. Neither knowledge nor the processes by which it is increased can guarantee peace and security in the next decades. Given reasonable time, however, technical work at the international level can contribute to the improvement of the political situation in many ways, some small, and some profoundly important.

One of the useful, if less important, ways in which international research can bring better understanding is through the opportunities it gives for persons of all nations to work together. Even in times of political unrest, analysts with widely divergent backgrounds can learn to work together on limited concrete problems utilizing universal scientific techniques. Such work is particularly fruitful of better understanding if it deals with issues in which the immediate political stakes are not so high that reason must be used to win a case, rather than to find a generally acceptable solution.

No one can have listened to recent political disputes, both national and international, without being impressed by the amount of unnecessary disagreement. Advocates put their cases forward in such general terms, and in language containing so many slogans with ideological overtones, as to guarantee a maximum of misunderstanding. Probably there is no ultimate solution to this problem. Protagonist and antagonist will continue to use all available means to make their respective cases. However, analysts working together can do much to forestall this difficulty by posing precisely, and in language that can be understood by men of all ideologies, the wide range of practical problems on which fruitful work can be done even in the absence of fundamental agreement. It is the writer's belief that in careful work of this sort lies the means of discovering that our ultimate cleavages are less insuperable than they now appear.

Moreover, sound analysis can do much to limit the range of controversy. In the daily political debates, one is constantly impressed with the amount of heat generated in arguments that could not occur if the parties to the disputes were fully informed. The difficulty comes at all levels. The politicians disagree over matters that the specialist knows have long since been settled. The specialists disagree through ignorance of the results of their colleagues' technical work, and we all tend to argue the indeterminate instead of discussing the means by which problems can be put into determinate form. The social analyst has a major obligation to reduce the area of controversy by posing real issues in the light of solid knowledge. To the extent that he is successful in doing so, unnecessary disagreement will be reduced and political discussions will become increasingly relevant.

In this connection the statistical analyst has a special obligation to encourage the discussion of practical problems. He is in a unique position to pose the problems of a real world made up of real people, with problems of health, food, housing, education, and work. This real world is not always evident in the problems posed either by our more speculative colleagues, the social philosophers, or by the reformers. Given free rein the philosophers tend to talk themselves out of all contact with the economic, social, and political facts; and the reformers are likely to proliferate plans and programs that could be realized only in a world that did not need them. The statistical analyst of social, economic, and political problems has the obligation of realism. His work must start with the observation of people and society as they exist in their full inadequacy, and explore alternative plans from the point of view of their applicability to the world as it is, not as it might have been or ought to be.

If existing tensions are to be relaxed, present discord must be sublimated in new efforts to achieve common aims. Such common aims need not be unattainable flights of fancy. There is abundant evidence of the cynicism and frustration generated by the crash of high hopes for the unattainable. In unsettled times, we tend to forget that there are common aims—the hope for better food, better housing, better health, better education and working conditions. To the common man throughout the world, these aims are real. He seeks, not Utopia, but a little alleviation of his lot. We often forget, too, that much can be done within the framework of all ideologies to fulfill these hopes by solving common problems of social and economic engineering. By contributing to the solution of the hard practical problems of social engineering, the statistical analyst can do something to encourage a unified effort to reach common goals.

The service of the statistical analyst to international understanding is, of course, not limited to any single discipline. Each has its own function. From the writer's somewhat prejudiced point of view, however, the field of demography has three characteristics that give it a somewhat special position:

1. The objective data of demography, inadequate as they are, far surpass those available in other branches of social inquiry.
2. Population changes, on the one hand, contain predictable elements that make demography a useful instrument in planning for the future, and, on the other hand, register the effects of social, economic and political change in terms of birth, death and migration, which are focal points of unsurpassed importance to all the world's people.
3. Because it deals with the dynamics of human life in their economic, social, and political relationships, demography must treat a host of mutually related variables. The student of population should, as a result, be in an excellent position to warn of the dangers of oversimplification. He can, for example, point out to the statesman that today's political plans must provide for tomorrow's people, who will differ from those now here in number and distribution throughout the world. He can warn the engineer that the Utopia which would do very nicely for today, may prove to be overcrowded by the time it is attained. He can remind those planning agricultural programs that better nutrition means not only better health and fewer deaths, but also more people in need of better food. He can answer the dilettante realist who suggests withholding the fruits of technical knowledge from the world's undeveloped areas until birth rates decline, by pointing out that maximum levels of human fertility are a product of poverty and ignorance in a much more fundamental sense than they are a cause. By calling attention to these and a host of other interrelations he can do much to bring realism to the field of social engineering.

Before such service can be fully rendered, the demographer must put his own house in order. Through empirical research, he must substitute sound knowledge for the speculative pseudo-scientific generalizations with which the field of population studies has been too frequently associated in the public mind. Such speculative generalizations have too often been used as political weapons in support of unsavory causes. Their nature needs no elaboration, a few examples will suffice. On the one hand, "Germany, Italy and Japan needed living space"; on the other hand, they ".... needed larger populations to fulfill their destinies." "The world's tensions could be relaxed by free migration"; and, in strange contrast but often in nearly the same breath, ".... the world will remain a tinderbox until we disentangle the present mixtures of races, languages, religions and ideologies through huge population transfers." Such conclusions do not flow from the quantitative analysis of population change. They gain currency in its absence.

The careful, detailed and quantitative investigation of population change can do much to sift the grain of truth from the chaff of surrounding speculation. Demographers, whether in private employment or in national or international civil services, can contribute to international understanding by undertaking such work and making their results known in the language of intelligent laymen.

Thus far the discussion has dealt with the use of demography in the broad field of international social, economic, and political relations, and only incidentally with the work of an international agency. What, in fact, has the United Nations done to implement work in this field, and how far can it be expected to proceed in a politically taut world?

Obviously, in view of the brief time that has passed, more has been accomplished at the level of planning than at that of substantive work. As was pointed out in the previous paper, the Economic and Social Council has recognized the importance of research as well as of fact-gathering by providing for both a Population and a Statistical Commission. The duties of the Population Commission are to conduct studies and to advise the Council on questions relating to population, its modes of change and their social and economic interactions, and on matters of population policy. Moreover, the Council has recognized the intimate relation of population to other social questions by providing the Commission with a unique feature. It has observers from the Social, the Economic and Employment, and the Statistical Commissions, as well as the usual complement of observers from the Specialized Agencies and the non-governmental organizations.

At the Secretariat level we have, serving the Commission, the Population Division of the Social Affairs Department; and working in close cooperation with the Division, the Section on Population and Vital Statistics of the Statistical Office, to which the Division looks for its basic data. The Secretariat staffs are still in process of formation, but there is every reason to expect that a small but highly trained staff will soon be working. Liaison has been established with the Food and Agriculture Organization, the International Labor Office and the Interim Commission of the World Health Organization, as well as with other branches of the Secretariat. Although work has scarcely begun, considerable service on demographic matters has been given to various sections of the United Nations.

On the plane of our discussion today, however, the prospects for useful work in demography by the United Nations can best be appraised by the work of the Population Commission. Composed of the representatives of twelve nations and the complement of observers, it has now completed two sessions. Under the able chairmanship of Dr. Arca Parro' it has proceeded with system and vision to lay out a solid program of work.

First, the Commission dealt with problems of basic data and standard methods. On these matters it has:

(a) Requested the Secretariat to prepare digests of the plans of Member States for population censuses to be taken in or around 1950 for circulation among those Member States; and to cooperate with the 1950 Census of the Americas and with the World Census of Agriculture with a view to promoting a maximum degree of comparability of international demographic data.

(b) Drawn up, at its second session, a standard minimum list of subjects proposed for consideration in the 1950 censuses of population which it recommends for coverage and on which it regards work designed to achieve maximum international comparability as especially important. Annotations to this list have been drawn up for circulation among Member States. Comments received will be used as the basis for the Commission's more specific consideration of the problems at its next session. Similar action was taken with respect to a supplementary list of subjects which the Commission believes are important, but on which information is less urgently required from all censuses.

(c) Requested the Secretariat to facilitate efforts to obtain standard international terminology in the field of demography and called the attention of various agencies to the need for cooperative efforts to achieve comparable definitions of a variety of statistical procedures.

Second, at the level of substantive work, the Commission has initiated limited projects of immediate usefulness to the United Nations organizations by:

(a) Requesting the Secretariat to assemble the population data and estimates needed for immediate operations by the various departments of the United Nations and the Specialized Agencies.

(b) Developing, in some detail, the plans with which the previous speaker has dealt for a demographic yearbook to be issued first in 1949.

(c) Providing, in response to the action of the Economic and Social Council taken at the behest of the Trusteeship Council, for work on the Trusteeship Questionnaire. In anticipation of this need the Commission at its first session, had requested the Secretariat to prepare, on the basis of available information, analyses of the population of the trust territories. Two of these studies are now under way.

Finally, and most important of all from the point of view of its long-range contribution to the field of international understanding, the Commission has taken the initial steps to provide a frame of reference on which subsequent work in the field of practical policy can be built.

Nearly every proposal of a politically important nature relating to population is made against the background of an evaluation of the social and economic consequences of population change. Too often the basis of the evaluation is implicit and assumed rather than explicit and demonstrable. Too often the recommendations are based on misinformation and misunderstanding, which result in unnecessary dispute. It is clear that the rational approach to the evaluation of population policy can be made only in the light of sound understanding of the forces at work. It is essential, therefore, that efforts be made to achieve a basis for rational discussion before actual problems of population policy are considered.

The Commission has taken the view that the most useful first step toward developing such a common frame of reference would be to encourage Member States to undertake studies of their own situations which deal with: (1) the interplay of economic, social and demographic factors hindering the attainment of an adequate standard of living and cultural development, and (2) the most favorable rate of population change from the economic and social points of view.

The Commission also expressed the view that the most useful way to encourage such studies is to suggest the general lines along which they should be conducted by interested Member States. Such suggested plans for study would, of necessity, differ in accordance with the different types of demographic situations found throughout the world.

To facilitate its work in developing the general plans for such studies, the Commission has requested the Secretariat to prepare for its consideration at an early session:

(a) " Proposals for the selection of major demographic situations in typical economic and social settings for which study plans should be constructed."

(b) "A proposed plan of study for one or two major types of demographic situations in varied economic and social frameworks." It suggested further "...that the first type for which plans are made might well be that of a rather large population in an industrially undeveloped region, faced with the prospect of early industrial development, and having high mortality and fertility rates, the latter having thus far shown no sign of substantial decline."

The Commission, in beginning this project, has emphasized the view that careful planning at this stage will be repaid by the enhanced usefulness of such work as may be subsequently undertaken by interested Member States.

In summary, the Population Commission has concerned itself first with the prerequisites for technical work in its field, which are sound data and standard methods; second, it has set in motion limited substantive work designed to meet the immediate operating needs of the United Nations organizations in the field of demography; and finally, it has taken the first step toward securing comprehensive analyses of the interrelations of demographic, social, and economic change as a basis for its subsequent consideration of international problems of population policy.

Obviously, this is only a beginning; the test of accomplishment is still to come. The view both in the Secretariat and in the Commission is that the beginning bodes well for the future. There have been difficulties of misunderstanding, both linguistic and technical; there has been mutually inadequate knowledge of each other's technical work; there have been national sensitivities and divergent ideological interpretations. However, unlike many of the current political discussions, all negotiations have been conducted with a tolerant and friendly spirit. Moreover, out of the negotiation and debate has come an almost unbroken series of unanimous decisions which, in the writer's opinion, were more useful than either the Secretariat or any delegation could have produced alone.

It is the writer's belief that under the leadership of the Commission and the Council, international population problems may for the first time be brought to the level of political discussion on the basis of sound technical knowledge. If so, we may still hope to attain those rational population policies that are essential to a realization of the aims of the Charter for improved health, material welfare and cultural development for the world's people.

Résumé

C'est en participant à la solution de problèmes d'ordre pratique que pose l'organisation social et en encourageant des efforts communs qui s'exercent vers des buts communs, que l'analyste des statistiques contribue à la compréhension internationale. Le domain de la démographie occupe une position spéciale, du fait: 1) que l'on dispose de données objectives beaucoup plus nombreuses; 2) qu'il exist certains éléments de prévision; 3) que la démographic a affaire à beaucoup de variables liées les unes aux autres. Le démographie doit toutefois substituer aux généralisations pseudoscientifiques d'ordre spéculatif une science solide fondée sur la recherche expérimentale.

Avec la collaboration de la Commission de statistique et des services correspondants du Secrétariat, la Commission de la population des Nations Unies: 1) s'est préoccupée du problème des données de base et de méthodes uniformes dans ce domaine; 2) a pris l'initiative d'entreprises limitées d'une utilité immédiate pour les organismes des Nations

Unies; 3) a pris les premières dispositions pour disposer d'analysis détaillées des incidences mutuelles des variations démographiques, sociales et économiques, analyses sur lesquelles reposera l'examen ultérieur des problèmes internationaux de politique démographique.

Elle a en particulier prié le Secrétariat de rédiger un résumé des projets des Etats Membres touchant le recensement de la population prèvu pour les environs de 1950 et de collaborer au recensement des pays américains en 1950 et au recensement agricole mondial; elle a rédigé une liste-type minimum de rubriques à faire figurer dans les recensements de la population de 1950; elle a attiré l'attention de diverses institutions sur la nécessité d'un effort commun pour arriver à des definitions comparables dans le domaine de la démographie; elle a dressé le plan d'un annuaire démographique qui doit paraître pour la première fois en 1948; elle a fait rédiger des analyses démographiques sur les territoires sous tutelle, en corrélation avec ces travaux concernant le questionnaire relatif aux territoires sous tutelle.

Discussion

Mr. G. LOYO (Mexico) addressed a question to Mr. Linder as to whether the respective agencies of the United Nations concerned with population statistics were carrying out specific studies of demographic indices which would be of greater significance than traditional ones, such as birth and death rates, which were often inaccurate and inadequate.

Mr. LINDER replied that many were aware of the deficiencies of present indices and were thinking of developing new measures, such as the suggestion of the Food and Agriculture Organization for a combination of various demographic materials into a social index. He mentioned that the Consultative Committee on Statistics had discussed this proposal, and suggested that there was need for a sharpening of the concept.

Mr. LOYO, commenting on Mr. Notestein's paper, suggested the desirability of demographic studies and policy on a scientific basis to overcome the influence of population theories since the eighteenth century and of those advanced by Italy, Germany and Japan in World War II. He urged the development of new theories to correspond to new ideas of international cooperation toward higher standards of living.

Mr. W. WINKLER (Austria) raised a technical point with reference to Mr. Notestein's paper, suggesting the possibility of a new approach to the classification of population types.

Mr. IDENBURG (Netherlands) commenting on Mr. Notestein's paper, expressed his belief that presentation of hard facts could influence the attitudes of those who had to do with formulating policies.

Mr. SHIRRAS (United Kingdom) asked Mr. Linder whether, in the population statistics published by the United Nations, sufficient emphasis had been given to different methods of taking censuses, registering births, etc., in different countries. He cited his own experience in connection with such activities in India, and raised the question whether the United Nations could give some indication of the quality of the figures included in its publication. He also addressed a question to Mr. Notestein, as to whether the net reproduction rate had not been overused.

Mr. C. CHANDRA SEKAR (India) regretted that the vital statistics for India, as published in the United Nations *Monthly Bulletin of Statistics*, were incomplete and defective, and that there was no immediate possibility of improving them to a hundred per cent efficiency. The problem involved finances, since India spends only about the equivalent of eight cents per capita for both medical and public health services.

However, the All-India Institute of Hygiene and Public Health was working on procedures to obtain birth and death rate figures, to a five per cent standard error, at a cost of about two cents per capita. He hoped to see India's position much improved in regard to the quality of her vital statistics.

Mr. STOWMAN (WHO) indicated two aspects of Linder's paper which interested his Organization: (1) collection and dissemination of data by international organizations, which had started with the publications of the League of Nations and the International Statistical Institute and which he hoped could now be carried on by the Statistical Commission on a wider scale; (2) international comparability of statistics, which could be built on the previous work in such fields as the definition of live births and stillbirths and the joint classification of causes of death.

Mr. LINDER gave his answer to the various comments by reiterating his awareness of the tremendous differences in coverage, methods, and resultant adequacy of data from different countries. He hoped to go as far as possible in the official publications to indicate the validity and accuracy of published data. He believed the solution lay in the efforts of national statistical offices to generate themselves data necessary for accurate presentation of materials. He referred to the interests of the Inter American Statistical Institute in the cooperative improvement and development of statistics in the population census field.

Mr. NOTESTEIN answered the question in regard to the use of the net reproduction rate, believing most of the recent attacks in this direction were based on unusual fluctuations in the birth rate as a result of the war. He still considered the net reproduction rate useful, but should be based on a longer span, say five years. He emphasized further that neither the crude birth rate nor the net reproduction rate nor the intrinsic rate of natural increase should be the end of the story but rather the beginning of more relevant measures of the dynamics of population growth.

The meeting was adjourned.

COMPARABILITY OF NATIONAL INCOMES

Friday, September 12, at 2:00 p.m.

CHAIRMAN:

R. G. D. Allen

Member from the United Kingdom, Statistical Commission of the Economic and Social Council

The CHAIRMAN introduced the following speaker:

THE COMPARABILITY OF NATIONAL INCOME STATISTICS

by J. B. D. Derksen

Chief, Section of National Income Statistics and Research
Statistical Office of the United Nations

1. INTRODUCTION

On March 29, 1947, the Economic and Social Council adopted a resolution, in accordance with a recommendation of the Statistical Commission, requesting the Secretary-General of the United Nations to pursue as expeditiously as possible work on statistics of national income and expenditure in order to provide comparable international data in this field. The paper submitted herewith should be considered as a preliminary survey of a more extended inquiry now undertaken by the Statistical Office of the United Nations into the available statistics of national income and expenditure. The Statistical Office is engaged in preparing a report for publication dealing with national income statistics. It is planned to include in this report chapters on the following subjects:

(a) The various definitions of national income, their implications, and the relationships between the various income aggregates in general use.

(b) Tables of national income breakdowns and totals, beginning with 1938 whenever possible, together with a discussion of the definitions and methods used, for each of approximately twenty-five countries. The data and discussion for each country will occupy a separate section, but the arrangement of the tables and the accompanying textual material in each section will be on as uniform a basis as the nature of the material permits.

(c) Tables of comparable national income data indicating the adjustments that have been or should be made in each case in order to bring the original estimates into conformity with the standards adopted for international comparisons.

(d) Tables of national income at constant prices for those countries publishing such data, together with a general discussion of the measurement of real national income.

(e) Tables presenting the social accounts of those countries making use of a system of accounts, together with a general discussion of the theory of systems of social accounts.

(f) A synoptic table giving total national income data for each of approximately thirty countries from 1929 to the present time.

(g) A national income bibliography listing important sources of data for as many countries as possible and leading books and articles dealing with the subject of national income and related topics.

The present survey covers items (a), (b), and (c) only, discussing the main results for the countries for which on August 1, 1947, data had been received. For a complete account of the results of the investigation and a detailed survey of the national income statistics concerned, the reader is referred to the forthcoming report of the Statistical Office of the United Nations.

It will be clear that such an inquiry had to be based on certain principles and had to be carried out along certain general lines in order to be workable. As a general framework, use has been made of the Report of the Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts, entitled, "Measurement of National Income and the Construction of Social Accounts". To this report, which was adopted by the Sub-Committee at its Session held in Princeton, New Jersey, December 17-20, 1945, is attached an appendix on "Definitions and Measurement of the National Income and Related Totals," prepared by Mr. Richard Stone, chairman of the Sub-Committee. Without the aid of this detailed and comprehensive report, the Statistical Office of the United Nations would not have been able to carry out so promptly the recommendations of the Statistical Commission.

The Statistical Office has also taken into consideration the experience of various government agencies which have studied the international comparability of national income statistics, as well as the publications of individual experts in this field.

The present report should be considered as a first draft which will have to be revised in the light of comments received and new experience that may be gained in the future. It contains figures for those Member Countries for which data could be obtained in the relatively short time available and also for a few non-member countries. Steps to obtain data for more countries and to broaden the information for those countries for which data have been included are taken continuously.

The present study covers the period 1938-1946 as far as figures are available for these years.

2. The Definition of National Income and its Implications

In this section a survey will be given of the terminology regarding national income and related totals adopted in this study. Furthermore, the definition of national income will be investigated in some detail, prior to the analysis of existing national income data in the next section and the adoption of a standard definition in Section 4.

National income is now generally defined as the aggregate of the values added of all goods and services produced by the economy over a certain period, usually a year, including the income received from abroad and minus income accruing to residents of foreign countries.

This definition is indicative more than exhaustive. Its application in a given case requires additional clarification. To mention a few examples: it will be necessary to state explicitly which goods and services enter into the definition, what is to be understood by value added, and what the basis for valuation should be, how goods and services should be treated which as a rule are not sold for money, or for which no market exists, although their production involves a cost to the community. Sometimes it is necessary to state explicitly whether or not a certain money flow should be considered as a payment for services rendered. A clear interpretation should be given of what is to be understood by residents, which money streams comprise income from abroad, etc.

The value added equals the aggregate remuneration which the residents and the collective providers, supplying the factors of production—labor, land, capital and entrepreneurship—derive from the production of goods and services. For this reason national income as defined is often called *national income at factor cost.*

Value added may also be defined as the value of the goods and services produced, less the value at current prices of the goods and services used up in the production, and less depreciation charges. Allowances for bad debts and business insurance premiums are usually also deducted, though with respect to these items treatments may vary. Most investigators also deduct indirect taxes and add subsidies. Some investigators also deduct social security contributions of employers, but others only subtract that element of the contributions which constitutes a payment for the administrative services rendered by the agency in charge of the social security scheme.

The exact definition of value added may give rise to problems when it is applied, for instance, to the services rendered by banks and other financial intermediaries or to the services performed by the government.

National income is, as a rule, limited to the goods and services for which a market exists or which involve a cost. The unpaid services of housewives are therefore excluded in most evaluations. On the other hand, it is customary to include such items as the consumption by farmers and other producers of their own products, payments in kind to household personnel, sailors, and others, certain services rendered gratis by banks, net rents of houses occupied by the owners, etc.

The *territory* covered by a national income estimate is usually determined by the political frontiers. As a rule it does not cover dependencies, possessions, protectorates or other non-self-governing territories, but is limited to the so-called mother country. National income statistics are usually given separately for dependencies in the relatively few cases where they exist.

National income is as a rule limited to the income accruing to *residents*, though this term is probably not always used in its strict legal sense. The geographical location of the office, factory, or establishment usually determines whether or not the services performed by the production factor labor are included. In the case of capital goods it is the country of the legal owners which determines whether or not income derived from capital is included. Problems may arise, for example, with respect to border laborers whose country of residence is different from the country in which they work or with respect to life insurance companies operating abroad.

Income from abroad includes dividends and interest on foreign investments. Many investigators also include the undistributed profits of corporations operating abroad, after the taxes on corporation profits levied in foreign countries. Income from abroad may also include emigrants' remittances to relatives and other payments which, if taking place between residents, would be considered as transferred income. Interest on the national debt is often considered as transferred income. However, if bondholders are residents of foreign countries, it may be desirable to deduct interest paid abroad from the national income of the debtor country.

Personal income before tax equals the aggregate current receipts of persons. Personal gifts between persons may or may not be counted again among the incomes of the recipients.

Private income before tax equals personal income before tax, plus undistributed profits of businesses.

National income at market prices or *net national product at market prices* equals national income at factor cost plus indirect taxes or similar levies, minus subsidies.

Gross national product at market prices equals net national product at market prices plus allowances for depreciation, maintenance, and bad debts and net business insurance premiums.

Domestic national income is a term used to indicate national income produced by economic activity within a country's borders. Therefore, it equals national income minus net income received from abroad.

There exists no standard definition of *total available means.* The term is sometimes used to indicate national income, in whatever meaning, plus net capital imports.

The relationship between the various income concepts is illustrated by the following table, based on fictitious figures.[1]

1.	Personal income before tax		4,900
2.	*plus* Undistributed profits of businesses ..		250
3.	Private income before tax		5,150
4.	*plus* Income of public authorities from government-owned enterprises	50	
5.	*less* Transfer payments from the government to the private sector	−600	
6.	*less* Gifts between persons	−300	−850
7.	National income at factor cost ..		4,300
8.	*plus* Indirect taxes and similar levies, *less* Subsidies		475
9.	Net national product at market prices ..		4,775
10.	*plus* Allowances for depreciation and maintenance, bad debts, net business insurance premiums ..		500
11.	Gross national product at market prices ..		5,275

National income is usually evaluated on an accrual basis, *i.e.*, the income payments are taken at the moment the productive services are rendered. Theoretically at least two other approaches are possible. Income payments may also be taken at the moment they are due or at the moment they actually take place. It is not always possible to evaluate the entire national income on an accrual basis. For example, dividends are often included at the moment they are payable, which may lag behind the period in which they are earned. Sometimes a correction is made for this lag by "shifting back" the aggregate of dividends. This procedure is not usually applied to dividends received from foreign investments.

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[1] *Cf.* Report of the Sub-Committee on National Income Statistics, Appendix, Chapter II. Table quoted here with a few minor changes in the text and figures.

Agricultural income is also often calculated on a cash basis. An increase in the number of livestock, which would have to be considered as capital formation, is in such cases not included in the income of the period considered, but appears in the income of a later year when the animals are delivered to be slaughtered or sold. If agricultural income is calculated strictly on an accrual basis, the increase is included in the income of the year under review. It is more difficult to make similar adjustments for the retail and wholesale trades. Stocks are usually evaluated at purchasing price, and though interest on capital invested in stocks will usually be imputed, entrepreneurial income appears only at the moment goods are sold.

Another important example is found in those manufacturing processes where the construction period is comparatively long, as in ship or building construction. Work on hand at the end of the year is usually evaluated on the basis of total outlay in wages, etc., and appears therefore in the national income of the current year, except for profits which are usually only imputed upon completion of the ship or building.

The memorandum, "Definition and Measurement of the National Income and Related Totals," attached to the above-mentioned Report of the Sub-Committee on National Income Statistics, gives a thorough discussion of the concept of national income and the many problems arising in relation to its evaluation. However, in many countries the present condition of research in this field may not yet permit the realization of this extensive program. The discussion of the following points summarizes what may be considered as the minimum to which attention ought to be given.

It is very desirable that any investigation into national income, however crude or incomplete, should contain a description of the definition of national income adhered to, followed by specific information on the treatment of the following items:

Non-Monetary Items

1. Unpaid services of housewives.
2. Net rents of owner-occupied houses.
3. Services of other durable consumers' goods.
4. Farmers' consumption of own produce, and similar items.
5. Payments in kind to household personnel, sailors, etc.

Social Insurance, Pensions and Unemployment Assistance

6. Contributions to pension funds and social insurance funds, military pensions, etc.
7. Unemployment assistance, dismissal compensations, etc.

Government Services, Taxes and Subsidies

8. Government services, civilian and military.
9. Profits and losses of government-owned enterprises.
10. Corporate income tax.
11. Indirect taxes and subsidies.
12. Interest on the national debt and on other public debts.
13. Income of armed forces abroad.

International Transactions

14. Deliveries under lend-lease and mutual aid, occupation costs, reparations.
15. Personal remittances.
16. Interests and dividends received from abroad, profits of corporations operating abroad.

Miscellaneous

17. Inventory revaluation adjustments.
18. Farm inventory changes.
19. Business insurance premiums.
20. Services rendered by banks and other financial intermediaries.
21. Costs of buying and selling securities and other property by individuals.
22. Illegal, immoral and black market transactions.

This list should in general be considered as a minimum. Items 13, 14, 16 and perhaps one or more of the others may not apply in all cases.

Items 1-5 refer to groups of commodities and services which by their nature are not exchanged for money. Considering the general principle explained before, it may be doubted, therefore, whether they ought to be included in the national income. The answer to this question must depend mainly on the practical use to be made of national income estimates. Experience has shown that for most applications inclusion of Items 2, 4 and 5 is to be recommended. However, it may quite well happen that in certain cases a different treatment is to be preferred.

The argument for inclusion of these items is that a more complete picture is thus obtained of all goods and services which together determine the welfare of a nation. On the other hand, it may be emphasized that for a number of applications only those items which as a rule may be exchanged for money have an economic significance. For the analysis of all short-term fluctuations the inclusion of non-monetary items is of limited value, as these are, as a rule, affected very little by price fluctuations and, in general, do not influence the fluctuations in other economic magnitudes to a noticeable extent.

1. *The unpaid services of housewives* add substantially to the welfare of a nation and their inclusion may on this ground be defended. Particularly during and immediately after a war, when paid household

personnel are very scarce, the exclusion of the services rendered by housewives may lead to an underestimation of real national income in comparison to the situation before the war. However, the case also illustrates clearly the difficulties of including goods or services which as a rule are not exchanged for money. The assumptions on which an evaluation of these services must be based necessarily contain an element of arbitrariness. As a rule, wage rates for paid household personnel are used as a basis, combined with an assumed average number of hours worked per week. The imputed rate of pay for housewives does not necessarily have to be taken as equal to the hourly wages of paid personnel, but may be derived from them through multiplication by some coefficient.

The method may be further refined by taking into account the size of the family, and by making different assumptions for urban and rural areas, and for the agricultural and the non-agricultural population. For families in the higher income brackets a lower number of working hours per week will have to be taken into account. The number of married women not gainfully occupied is as a rule obtained by extrapolation of census data. Unmarried daughters above an assumed age limit, not gainfully occupied and not attending schools and colleges, will likewise have to be taken into account.

It is not surprising that, for those countries for which the unpaid services of housewives and similar groups have been evaluated, the results appear to differ considerably. It is not an easy task to estimate to what extent these deviations truly reflect the actual situation, and to what extent they are due to the arbitrariness of the assumptions introduced.

It is usually very difficult to estimate the year-to-year fluctuations of items which as a rule do not appear in the monetary sphere. This is especially true for the unpaid services of housewives. There is little doubt that during the war housekeeping became more difficult due to rationing, the general scarcity of goods, use of substitutes and other reasons. However, any attempt to reflect this adequately in annual estimates of these services must necessarily remain unsatisfactory.

The significance of an evaluation, however crude, of the unpaid services of housewives is probably this: that it emphasizes their importance as compared to the monetary sphere of the economy.

2. *Net rental values of owner-occupied houses* are now as a rule included. This is in logical accordance with the generally acknowledged principle that the services rendered by houses, buildings, and land constitute a real contribution to the national income.

The statistical evaluation may meet with difficulties because of scarcity of basic data. Where the estimate has to be derived from fiscal statistics, there is the danger of under-valuation because of the tendency among taxpayers to under-report this item somewhat.

Other problems may arise in connection with the rental value of farms, which will have to be estimated separately in those cases where it is not included in the estimate of income from agriculture.

3. *Services of other durable consumers' goods*, such as furniture, automobiles, clothing and radios, are as a rule not included in the national income. The item would be difficult to estimate, and at the same time it would have to be based on somewhat arbitrary assumptions, which would impair international comparisons. For this reason it is usually preferred not to include this item in national income.

4. *Farmers' consumption of own produce* is usually included in the national income, though the item may be difficult to estimate. The products ought to be valued according to prices paid to farmers, and not on the basis of retail prices. The latter method is sometimes followed in family budget statistics. For the purposes of national income research it is better not to include a fictitious retailers' margin to which no services actually rendered would correspond.

The proceeds from gardens kept by the non-agricultural population should likewise be included. Under normal circumstances this is probably an unimportant item. In times of war it may be more significant, though there is sometimes a tendency to overestimate it.

Under the same heading belongs the income in kind derived by other groups of the population from their own activity, such as, for example, the benefits enjoyed by retailers who use up some of the products they sell. These should be evaluated not at wholesale prices, but at prices charged to consumers. Unless this is done, the national income will be under-estimated by the amount of this margin.

5. *Payments in kind to household personnel, agricultural laborers, sailors, military personnel, etc.*, in the form of food, clothing, shelter, etc., are generally included in the definition of national income. The estimates are usually based on adopted rates which may fall somewhat short of the costs actually involved. There exist variations in treatment with respect to the armed forces, for which sometimes only food is included.

Of a different character are the issuance of free meals to factory workers and, in times of rationing, the granting of extra coal to miners' families, or of butter to workers in butter factories, etc. Such issues in kind are likewise to be included in the national income.

Free meals for school children, payments in kind to the unemployed or the poor, and similar items should be considered as transferred income.

6. *Contributions to social insurance funds and pensions funds* are usually treated as follows: Premiums paid by employees are considered as part of labor's share in the national income. With respect to

employers' contributions, various methods are used. These payments are sometimes considered as indirect taxes, whereas in other countries both employers' and employees' contributions are regarded as part of the remuneration of labor.

These differences in treatment may sometimes be explained by differences in the historical development of these schemes. In those cases where the social insurance schemes are not run by the government but by a private or semi-official body, there is no reason why the employers' contribution should be treated like an indirect tax.

In the interest of greater international comparability, it seems advisable to regard employers' contributions as a part of the income accruing to labor. A refinement of the method may be obtained by taking into account only the net premium. In other words, that element of the premium which constitutes a payment for the services rendered by the agency in charge of the administration of the social insurance scheme should not be included among the income assumed to accrue to labor.

In those countries where medical services are provided free by the government, it is perhaps preferable not to include them among the income accruing to labor, but to treat these services as transferred income.

The treatment as suggested implies that all pensions, benefits, annuities, etc. paid out of the funds must be considered as transferred income.

Where no separate pension funds for government personnel exist, it is customary to pay pensions out of current government expenditure. The pensions may then be considered as deferred payments for services rendered in previous years, and on that ground included in the national income. A similar procedure may be adopted with respect to military pensions, though sometimes these are classified under transferred income. Pensions to war widows and similar groups should perhaps also be included among transferred incomes.

7. *Unemployment assistance* is generally regarded as transferred income. It is an element of total personal income, but it should be eliminated from national income at factor cost to avoid double counting. The item should be taken net of the administrative costs of the agency in charge of the payments. Issues in kind should be included at the prices paid by the government.

Sometimes employees who have served for a long period of time receive compensation upon their discharge. Such compensation should likewise be included in transferred income, though sometimes it is treated as payment for services rendered. In some countries the item gains a certain significance during periods of growing unemployment. Wages paid for public relief works are usually regarded as productive and included in national income. Government subsidies to wages constitute a more difficult case. Whether they should be regarded as transferred income or as a payment for services rendered, depends on the purpose of such subsidies, which are usually only paid in cases of temporary emergency or economic dislocation.

8. *Government services* are largely financed out of the proceeds from direct and indirect taxation and consequently there is no direct relationship between one's contribution and the services received from the government.

In connection with the measurement of the national income, government services give rise to two groups of problems:

(a) A basis must be found for the evaluation of the contribution of the government to the national income.

(b) It must be indicated how taxes and subsidies should be treated in defining value added for the private sector of the economy.

Except for a small volume of services for which the government receives payment in the form of fees, all government services not performed in enterprises are provided free. The theory that total tax receipts including other less important forms of revenue, may be considered as a measure of the value to the community of the government services outside enterprises has found few adherents. It is generally admitted that taxes are not directly related to the volume of services provided by the government. Tax legislation is in most countries not even exclusively concerned with finding means of meeting the costs of government. More and more taxation has become an instrument of economic policy. Taxes may be introduced or modified to promote economic stability or to reduce the inequality of the income distribution. Governments may strive to realize a budget surplus or they may deliberately refrain from meeting expenses exclusively from taxation. It is, to mention an important example, often undesirable or even impossible to finance war expenditure entirely from increased taxation. Consequently, the value of government services cannot always adequately be expressed by total tax revenues.

Most government services are rendered without a market price being charged to consumers. On this ground they might be evaluated at a zero price which, however, would result in the elimination of most of government activity from national income. As this seems unsatisfactory, there remains no practicable solution other than to evaluate this item on the basis of the costs incurred by the government.

Government expenditure after elimination of all double counting equals public expenditure on goods and services, including capital formation at home and abroad, plus transfer payments, plus interest on and redemptions of all public debts plus subsidies.

The net value added of the government services includes, therefore, wages and salaries of government employees, plus premiums to pension schemes and social insurance funds or similar items. It may include the interest on public debts insofar as it accrues to lenders residing in the country. However, many statisticians now advocate including only that part of the interest resulting from investment in government enterprises. When the national debt has its origin in former war loans and consequently is not covered by productive property, it seems logical to consider the interest on such debt as transferred income and to exclude it on that ground from income produced in the government sector. In some countries attempts have actually been made to evaluate the total value of government-owned productive assets, like roads, bridges, harbors, public buildings, etc, Inclusion of the interest on the national debt seems justified when it is found that the aggregate value of all such assets is about equal to the national debt outstanding. The weakness of the method lies in the difficulty of estimating accurately the value of all government-owned productive assets outside enterprises. Even in those rare cases where a balance sheet of government-owned property is available the estimates are extremely crude. Consequently, it would be difficult to determine from year to year to what extent the interest on the national debt may be regarded as covered by services from productive assets. On the other hand, exclusion of that part of the interest on the national debt not resulting from investments in enterprises may lead to an underestimation of the national income in comparison with countrie where public property is less developed.

Most investigators include income of the armed forces, though differences in treatment exist with respect to food, clothing, and shelter. Such issues in kind are occasionally only partly included and sometimes not at all.

The services of the armed forces are sometimes not regarded as economic activity in the proper sense of the word, and on that ground are excluded from the definition of national income. This treatment implies that the production of munitions would likewise have to be excluded and also the production of semi-finished goods destined for the munitions industries. It would be very difficult to draw a dividing line, and any statistical evaluation would therefore have to be based on somewhat arbitrary assumptions. As this would greatly reduce the value of national income figures, it seems preferable for most purposes to include all military personnel in the definition of national income.

9. *Enterprises owned by the government* and operated on the basis of the profit motive do not usually offer difficulties. They are treated like private businesses and the value added is determined in accordance with the principles set out before. Interest, rent, and profits represent income to the government as a return on capital invested. Government enterprises, such as public utilities, sometimes enjoy a monopoly position,

resulting in considerable surplus profits. Some authors prefer to treat these surpluses, if not reinvested in the enterprise concerned, as indirect taxes, and consequently do not include them in value added. Depreciation allowances may not be established in the same manner as in private enterprises, and consequently may require adjustments. This does not in general lead to serious difficulties. Neither does the fact that the borderline between government-owned enterprises and all other government activity is not always clearly defined.

Losses suffered by government-owned enterprises are considered as negative income. There are, however, exceptions to this rule. Sometimes a deficit is compensated by a subsidy, which is then considered as a contribution made by the government in the interest of maintaining the enterprise concerned and is, therefore, not to be regarded as a loss.

10. *Corporate Income Tax.* When defining national income as the total of all incomes accruing to factors of production, profits of corporations may be taken before or after corporate income tax. Most investigators now prefer the former procedure. If national income is conceived of as the aggregate of all incomes paid to factors of production, then it seems logical to include profits before taxes. On the other hand, in a number of countries corporate income taxes are a tool used by the government to control the rate of profits, just as by other means wage rates are controlled, or rents are kept within certain limits. In such cases it may be more in accordance with the actual conditions to consider profits after taxes. It may be difficult therefore to find a procedure valid under all circumstances.

11. *Indirect Taxes and Subsidies.* When defining net value added as the total of all incomes accruing to the factors of production, indirect taxes are automatically deducted. It would seem, therefore, that the concept of national income at factor cost is tantamount to assuming that indirect taxes are a form of payment for services rendered by the government to business enterprises. Such an assumption is, however, generally not adhered to by those who defend national income at factor cost as the appropriate concept to be used. Assuming for a moment that government services could be clearly distinguished in services rendered to ultimate consumers and intermediate services rendered to business enterprises, it cannot be expected that the total of all indirect taxes would coincide with the aggregate value of all intermediate services. Also, it may be expected that the ratio of the two aggregates will vary over time.

One school of thought proceeds as follows: Admitting that the two aggregates mentioned do not necessarily balance, an attempt is made to evaluate all government intermediate services. This requires the solution of such problems as what part of total services rendered by the police may be attributed to ultimate consumers and what part to producers. It is believed that more or less satisfactory criteria can be established that can even be used for a number of years consecutively. If it is found that the total of all intermediate services is exceeded by the total of all indirect taxes, then the difference must be used by the government to finance services rendered to ultimate consumers, for transfer payments, or for new investments. The difference, indirect taxes minus intermediate services, is sometimes called "taxes not included in personal income" and added to the total of all incomes accruing to the factors of production. The aggregate thus obtained is then considered as representing the national income. The method, if correct, would have the advantage of solving at the same time the intricate problem of whether corporate income should be included before or after taxes. The theory is, however, liable to criticism because it disregards the problem of the incidence of indirect taxes. Assuming for a moment that indirect taxes would exceed the government's intermediate services, then a change of the tax system could be imagined by which indirect taxes would be reduced, and direct taxes raised until indirect taxes and government intermediate services balance. The question arises as to what the effect would be of these fictitious changes upon prices and incomes. It is obvious that the above-mentioned theory tacitly assumes that all incomes will rise by an amount equal to the reduction in the indirect taxes. This, however, is a very hazardous assumption. Actually, it is much more realistic to assume that the greater part of the reduction in indirect taxes will lead to a reduction in prices and not to a corresponding increase in the incomes. It can easily be seen that if the elasticity of supply for all goods together is very high, as is actually the case, the incidence of a change in the indirect taxes is almost entirely upon prices, and not upon the incomes paid to the factors of production. Consequently the total of all incomes earned by the factors of production remains unchanged, from which it may be concluded that as far as the problem of the treatment of the indirect taxes is concerned, national income at factor cost seems to be very approximately the appropriate concept to which to adhere.

The above theory may not be valid for those cases where prices are largely determined by conditions on foreign markets. This may be the reason why sometimes indirect taxes falling on exports are added to national income at factor cost. The correctness of this procedure is, however, questionable. In the absence of a better founded treatment, which in all probability may be very complicated, without leading to substantial corrections, national income at factor cost may probably be regarded as the approximate concept to be used, when a reasonable degree of comparability over time or between various geographical areas is needed.

In the light of the above, subsidies which may be considered as negative indirect taxes will need little further comment.

12. *Interest on the national debt and on other public debts* has been discussed under 8 above.

13. *Income of armed forces abroad* is usually included in the national income as the members of the armed forces are considered as residents temporarily abroad. Actually, two cases may occur. Either the costs of the armed forces abroad are borne by the country itself, or they may be paid for by the occupied country in the form of "occupation costs".

14. *Deliveries under lend-lease and mutual aid, occupation costs, reparations.* All these payments and deliveries may conveniently be considered as part of the national expenditure of the countries making them. Exceptions are reparations in the form of deliveries of existing capital equipment, which are derived from a country's national wealth.

15. *Personal remittances* form part of the national expenditure of the country where these payments originate. Accordingly, they should not be added to the national income of the receiving country, though this is done in a number of cases. It is not always easy to determine if personal remittances actually are a part of national expenditure, or whether they do not in part represent capital transfers. The money taken home by a seasonal worker is usually considered as a remittance out of the national income of the current year. However, when a person after spending a number of years in the tropics returns to his home country, his accumulated savings are usually not considered as a remittance out of the current national income of the tropical country concerned.

16. *Interest and dividends received from abroad* are included in the national income, but differences of treatment exist with respect to the undistributed profits of corporations operating abroad. Most statisticians will agree that these profits ought to be included, after taxes paid, but owing to problems of statistical measurement, this is often not done. Still more difficult would it be to attempt to estimate the stockholders' share in the undistributed profits of foreign corporations in which he has invested.

17. *Inventory revaluation adjustments* are rarely applied due to the difficulties of statistical measurement. The problem has been dealt with extensively in the literature on national income and, therefore, does not need further comment.

18. *Farm inventory changes* have been dealt with before, when reference was made to the two approaches to national income, *viz.*, on a cash basis or on accrual basis.

19. *Business insurance premiums* will be eliminated when estimating net value added. The premiums contain two elements: a payment for

the services rendered by the insurance company, and the net premium covering the risk. The net premiums are usually treated as depreciation allowances, when gross national product must be estimated. When actual losses exceed the total of all net premiums, there is a decrease in wealth, and when losses remain below net premiums, reserves of insurance companies increase.

20. *Services rendered by banks and other financial intermediaries* give rise to problems which have been discussed in detail in the Report of the Sub-Committee on National Income Statistics. In principle two problems must be distinguished:

(a) The determination of the net value added of the services rendered by banks. Many statisticians are aware of the fact that inclusion of all profits of banks would imply double counting, as the profits are derived in part from returns received on long-term or short-term investments. Some statisticians exclude, on that ground, all profits of banks, others include an imputed interest on the buildings and equipment of the banks' offices.

(b) Banks meet their costs in part from the difference between debit and credit interest rates. This margin may be considered as a cost paid by borrowers to the banks for services rendered, or they may be regarded as payment for services rendered to depositors. In the latter case a higher interest rate is imputed to depositors, which is received back as expenditure by depositors for services rendered. This treatment means that the interest imputed to private individuals must be added to the aggregate of all incomes accruing to the factors of production, but that interest imputed to businesses cancels against imputed expenses of businesses.

21. *Costs to individuals of buying and selling securities and other property.* Very often the expenses of individuals in the form of brokers' fees and commissions for buying and selling of securities are considered an element of national expenditure. Sometimes, however, these expenses are charged against the returns from these investments, which consequently appear lower. National income publications rarely contain exact information on what methods were used concerning these costs.

22. *Illegal, immoral and black market transactions.* Illegal transactions are mostly excluded from the definition of national income. With respect to black market transactions, treatments differ. In many countries they are excluded from the national income, but the question then arises whether these transactions ought not to be included at official prices. The problem is rather complicated, because there are also business expenses at black market prices, which likewise would have to be revaluated at legal prices,

Where black market expenses are included in the national income the estimates are mostly on a conservative basis.

3. AN INQUIRY INTO THE DEFINITIONS OF NATIONAL INCOME USED IN THIRTY COUNTRIES

In accordance with the resolution, mentioned at the beginning of this paper, the Statistical Office addressed requests to all Member Governments of the United Nations asking that recent national income data and other relevant material be made available. In addition, the Statistical Office also wrote to certain non-member countries with a view to making its inquiry as broad as possible. On the basis of the replies received and with the assistance of material available in various official and unofficial publications, the Statistical Office has assembled national income data for about thirty countries. An investigation of the definitions adhered to in these studies has led to the following results. Using the terminology suggested in the previous chapter, the countries may be classified, according to the concepts adopted, as follows:

Concept	*Country*
National income at factor cost:	Belgium, British West Indies, Bulgaria, Canada, Chile, Czechoslovakia, Denmark, Dominican Republic, France, Ireland, Mexico, Netherlands, New Zealand,[2] Palestine, Peru, Puerto Rico, Switzerland, Union of South Africa, United Kingdom, United States of America.
Domestic national income at factor cost:	Argentina, Australia, France, Netherlands Indies.[3]
National income at market prices:	Finland, Hungary, Norway, Philippines.
Gross national product at factor cost:	India, Sweden.
Domestic gross national product at market prices:	Argentina, Australia, Denmark, France.
Gross national product at market prices:	Canada, Philippines.
Total available means:	China, France, Netherlands, Norway, United Kingdom.

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[2] Published figures show aggregate private income, but attempts are now being made to estimate national income at factor cost.

[3] The concept used differs somewhat from domestic national income. See §4.

The definitions adhered to in the studies for Greece and the Union of Soviet Socialist Republics cannot easily be inserted in the above list.

National income for Greece, according to the estimate for 1939 by C. Evelpides excludes rents, interests on all public debts, government services in the non-business sector, all personal services, and the professions.

According to the Russian concept national income refers only to material production, and is obtained by determining the net output of industry, building, agriculture, goods transport, communications (the proportion used for production purposes only), trade (wholesale and retail), and enterprises for communal feeding.

The above survey of definitions does not show the numerous differences in treatment of the various items entering into the national income. As a general framework for a systematic investigation use has been made of the list of items mentioned in §2. The main results have been summarized in Tables 1-4. The purpose of these tables is to give a survey of the general principles used in the countries. With respect to certain details the information shown may therefore be incomplete. For example: if it is stated that employers' contributions are included in the national income of a country, this does not preclude that for some special form of social insurance of minor importance a different treatment has perhaps been followed. The purpose of the tables is to show the principles adhered to, not non-essential details due to variety of sources or conditions. Not all items mentioned in the list of §2 have been included in the tables.

Very few countries give information on the concept of resident used in defining the national income. In most cases the place of performing work is more or less tacitly assumed as the criterion. In the United States a worker is counted as a resident individual if at least two of the three attributes—permanent residence, place of performing work, and location of employer—refer to the continental United States. Because of the fact that statistics of industrial or agricultural production, social insurance statistics, and other statistics cover all economic activity within the national boundaries, many countries will find the place where the work is performed the easier concept in practical statistical work. With respect to income from capital the permanent residence of the owners (stockholders, etc.) is the generally accepted criterion.

National income, defined as the aggregate of all income payments to factors of production, is used as the basic concept in the following survey. The tables indicate whether a specific item has been added to this total, or has been excluded.

Table 2 does not contain a separate column for "unemployment assistance," as this item is treated everywhere as transferred income.

TABLE 1

Treatment of Non-Monetary Items

	Unpaid services of housewives	Rents of owner-occupied dwellings	Services of other durable consumers' goods(1)	Farmers' consumption of own produce	Payments in kind to household personnel, etc. (2)
Argentina	—	—	—	x	n.i.
Australia	—	x	—	x	x
Belgium	—	x	—	x(3)	x
British West Indies	—	x	—	x	x
Bulgaria	—	x	—	x	x
Canada	—	x	—	x	x
Chile	—	x	—	x	—
China	—	x	—	x	x
Czechoslovakia	—	x	—	x	x
Denmark	—	x	—	x	x
Dominican Republic	n.i.	n.i.	n.i.	x	n.i.
Finland	x(4)	x	—	x	x
France	—	x	—	x	x
Greece	n.i.	n.i.	n.i.	n.i.	n.i.
Hungary	x(4)	x	—	x	x
India	—	x	—	x	x
Ireland	—	x	—	x	x
Mexico	—	x	—	x	n.i.
Netherlands	—	x	—	x	x
Netherlands Indies	—	x	—	x	n.i.
New Zealand	—	—	—	x	x
Norway	x	x	—	x	x
Palestine	—	x	—	x	x(5)
Peru	—	—	—	n.i.(6)	n.i.
Philippines	—	x(7)	—	x	n.i.
Puerto Rico	—	x	—	x	x
Sweden	—	x	—	x	x
Switzerland	—	x	—	x	x
Union of South Africa	—	x	—	x	n.i.
United Kingdom	—	x	—	x	x
United States	—	x	—	x	x

Explanatory Notes

x included

— excluded

n.i. no information

(1) Some publications mention specifically that income from the renting of furniture and other durable consumers' goods is included. This has not been indicated in the table.

(2) Refers to income in kind of household personnel, agricultural workers, hotel personnel, sailors, etc. Income in kind of the armed forces is dealt with in Table 3.

(3) Evaluated at retail prices. However, it is stated that the estimate is conservative.

(4) Figures excluding unpaid services of housewives are also published.

(5) Income in kind of domestic personnel excluded prior to 1944.

(6) The output for own consumption of the Indian communities in the highlands is excluded,

(7) The item has been estimated for the metropolitan districts only.

TABLE 2

Treatment of Pensions and Social Insurance

	Contributions to						
	Pension funds		Social insurance		Pensions		Social insurance benefits
	Government	Business	Employers	Employees	Civilian employees	Military	
Argentina	—	n.i.	n.i.		—	—	n.i.
Australia	—		—	x	—	—	—
Belgium	n.i		x	x	n.i.	n.i.	—
British West Indies	n.i.		n.i.	n.i.	—	—	—
Bulgaria	—	—	—	—	x	x(1)	x
Canada	x	x	x(2)	x	—	x	—
Chile	n.i.		x	x	x	x	n.i.
China	n.i.		n.i.		—	—	—
Czechoslovakia	—	—	x(3)	x	x(4)	—(5)	—
Denmark	x	x	x	x	—	—	—
Dominican Republic	n.i.		n.i.		n.i.		n.i.
Finland	n.a.	n.i.	—	x	x	—(6)	—
France	n.i.		x	x	—	—	—
Greece	—	n.i.	n.i.		—	—	n.i.
Hungary	—	n.i.	n.i.		—	—	n.i
India	n.i.		n.i.		x	n.i.	n.i.
Ireland	—	—	—	x	x	x	—
Mexico	n.i.		n.i.		n.i.		n.i.
Netherlands	x	x	x(7)	x	—	—	—
Netherlands Indies	x	x	n.a.		—	—	n.a.
New Zealand(8)	n.i.		x	x	x	x	x
Norway	x	x	x	x	—	—	—
Palestine	n.i.		n.i.		n.i.		n.i.
Peru	n.i.		n.i.		n.i.		n.i.
Philippines	n.i.		n.i.		n.i.		n.i.
Puerto Rico	x	x	n.a.		n.i.		x(9)
Sweden	x	x	x	x	—	—	—
Switzerland	x	x	x	x	—	—	—
Union of South Africa	x	x	n.i.		—	—	n.i.
United Kingdom	—	x	—	x	—	x(10)	—
United States	x	x	x	x	—	—	—

Explanatory Notes

x included
— excluded
n.i. no information
n.a. not applicable

(1) Including pensions of war invalids and allowances for victims of enemy persecution.

(2) Excluding that portion of employers' contributions to workmen's compensation funds estimated to be for medical expenses.

(3) In the national income for 1946 employers' contributions have been treated like indirect taxes and are excluded.

(4) For 1946 including pensions of retired personnel of government-owned and nationalized industries.

(5) Excluding also payments to war invalids and victims of persecution.

(6) Excluding all pensions to war widows, etc.

(7) Excluding that part of employers' contributions which covers the administrative cost of the social insurance schemes.

(8) Figures published for New Zealand show aggregate private income only. The information shown in the table refers to this concept.

(9) Workmen's compensation benefits in form of cash payments and medical care in case of accidents.

(10) Excluding pensions awarded for disability or death attributable to war service.

TABLE 3

Treatment of Some Items in the Government Sector

	Armed forces		Profits and losses of government-owned enterprises	Interests on the national debt outside government enterprises
	Income in kind	Allowances etc.		
Argentina	n.i.		x	—
Australia	x(1)	x(2)	x	—
Belgium	—		n.i	x
British West Indies	x	n.i.	x	—
Bulgaria	n.i.		x	x
Canada	x(3)	x	x	—(4)
Chile	n.i.		x	x
China	n.i.		n.i.	—
Czechoslovakia	n.i.		x	x(5)
Denmark	n.i.		x	—
Dominican Republic	n.i.		n.i.	n.i.
Finland	x	x	x	—
France	n.i.		n.i.	—
Greece	n.i.		n.i.	—
Hungary	—		—	—
India	n.i.		n.i.	—
Ireland	n.i.	x	x	—
Mexico	n.i.		n.i.	x
Netherlands	—	x	x(6)	x
Netherlands Indies	n.i.		x	x
New Zealand (7)	—	x	—	x
Norway	n.i.		x	—(8)
Palestine	x	x	x	—
Peru	n.i.		n.i.	n.i.
Philippines	n.i.		n.i.	—
Puerto Rico	x	n.i.	x	—
Sweden	x(9)	x	x	—
Switzerland	—	n.i.	x	x(10)
Union of South Africa	x	n.i.	n.i.	—(4)
United Kingdom	x(11)	x	x(12)	—
United States	x(11)	x	—(13)	—

Explanatory Notes

x included

— excluded

n.i. no information

(1) Including food, clothing, medical attention, etc.

(2) Deferred pay is excluded.

(3) Including food and clothing.

(4) Including an imputed interest on government property outside enterprises.

(5) In the estimate for 1946 interest on the public debts is excluded.

(6) The deficit on current account of the railroads is not considered as a loss but compensated by government subsidy.

(7) *Cf.* Table 2, note 8. Income of armed forces overseas is excluded from aggregate private income.

(8) It is recognized that interest should be imputed to government property in the non-business sector, but the item has not been estimated.

(9) Food only.

(10) No deduction was made for interest on unproductive debts, because it was found that interest received from government-owned enterprises plus imputed rent on buildings in the government non-business sector exceeded total interest on all public debts.

(11) Food and Clothing.

(12) However, the trading profit of the post office is treated as an indirect tax.

(13) Profits of government enterprises have not been added to other factor costs, because of the fact that some transactions of these enterprises have been non-commercial in character, particularly during the war and have not been separated statistically.

TABLE 4

Treatment of Certain Other Items

	Net personal remittances from abroad	Net interest and dividends from abroad	Inventory revaluation adjustment (non-farm)	Changes in livestock and crop inventories	Black market transactions
Argentina	—	—	n.i.	n.i.	n.a.
Australia	—	—	—	x	n.a.
Belgium	n.i.	x	n.i.	n.i.	x
British West Indies	x	x	n.i.	n.i.	n.a.
Bulgaria	n.i.	x	n.i.	—	x
Canada	—	x	—	x	—
Chile	n.i.	x	n.i.	n.i.	n.i.
China	x	x	—	n.i.	n.a.
Czechoslovakia	n.i.	n.i.	n.i.	x(1)	x
Denmark	—	x	n.i.	—	—
Dominican Republic	—	—	n.i.	n.i.	n.i.
Finland	—	x	n.i.	n.i.	n.a.
France	—	—(2)	n.i.	x(3)	x
Greece	n.i.	n.i.	n.i.	n.i.	n.a.
Hungary	x	x	—	x	n.i.
India	n.i.	x	n.i.	n.i.	n.i.
Ireland	x	x	n.i.	n.i.	n.i.
Mexico	—	—	n.i.	n.i.	n.i.
Netherlands	x	x	—	—	—
Netherlands Indies	—	—(4)	—	—	n.a.
New Zealand (5)	—	x	—	n.i.	n.i.
Norway	—	x	n.i.	—	—
Palestine	—	x	—	n.i.	x
Peru	n.i.	n.i.	n.i.	n.i.	n.i.
Philippines	n.i.	n.i.	n.i.	x	n.i.
Puerto Rico	—	x	x	n.i.	x(6)
Sweden	x(7)	x	x(8)	x(8)	—
Switzerland	—	x	x(8)	x	—
Union of South Africa	—	x	x(9)	x(9)	—
United Kingdom	—	x	—	x(10)	—
United States	—	x	x	x	—

Explanatory Notes

x included
— excluded
n.i. no information
n.a. not applicable

(1) Estimates made for the war period represent disinvestments in agriculture above normal rates of depreciation.

(2) Income from foreign portfolio investments is excluded ; income of French corporations operating abroad is included.

(3) Uncertainty of statistical data made an evaluation almost impossible.

(4) However, interest paid abroad is excluded.

(5) *Cf.* Table 2, note 8.

(6) Includes some income from sales at black market prices in agriculture.

(7) However, Swedish relief goods sent abroad have been considered as part of national expenditure.

(8) Actually these adjustments could hardly be made owing to lack of statistical data.

(9) The estimates shown on net capital formation do not allow for changes in stocks owing to lack of statistical data.

(10) The adjustments could not be carried out because of insufficient statistical information.

The dismissal compensations have been disregarded, as they are rarely mentioned, and probably are of very minor significance.

All countries include income of their armed forces at home or abroad, but differences exist with respect to the treatment of income in kind, family and other allowances, deferred pay, etc. Income in kind of the armed forces is sometimes not included, sometimes it is limited to food only, or it may include also clothing and other items. Allowances in money differ from country to country, and it will probably be difficult to develop a method applicable for all countries concerned.

Deliveries under lend-lease and mutual aid and occupation costs are generally considered as part of the national expenditure of the countries in which they originate. Consequently, the national incomes for the war years of the countries occupied by the Axis powers include all deliveries to the enemy in goods and services out of current production and the export surplus to Germany.

Personal remittances from abroad, though an item generally of minor significance, offer an example where a greater international uniformity of treatment may be desirable. There are now a few cases where these remittances are included in the national income both of the paying and the receiving countries.

With respect to business insurance premiums, an item not shown in the tables, there is also no uniformity of treatment. Most countries deduct the premiums when determining net value added. In Norway, however, only the part of the premium which represents a payment for services rendered by the insurance companies is deducted. Only a few countries give information on the treatment of war risk insurance. The evaluations for the United Kingdom indicate that these premiums were deducted, but it is not certain that the same device has been followed in all other countries engaged in the war. When evaluating gross national product, both depreciation allowances and net business insurance premiums should be added to national income at factor cost. Actually many countries add only depreciation. Canada, the United Kingdom, and the United States are probably the only countries where insurance premiums are added for the purpose of estimating gross national product.

There is also little uniformity in the treatment of the services rendered by banks and other financial intermediaries.

Available information may be summarized as follows:

Bulgaria. National income is determined according to the net output method by branckes of industry. The net value of services of banks and other financial intermediaries is assumed equal to salaries and wages plus profits. It is stated that this treatment involves some double counting as parts of the profits may derive from interest received.

China. In estimating the net output of the various industries including finance, interest income is counted twice: once in the nonfinancial industries and a second time in the net output of finance. The total of all net output is therefore adjusted by subtraction of this common item.

Netherlands. The margin between short term debit and credit interest rates has been considered as a payment for services rendered by the banks to business enterprises or to the government. No charges have been imputed against final consumers making use of bank services.

Norway. The contribution of the banks to the national income is taken equal to the total of wages and salaries paid, plus five percent on the insured value of office buildings and equipment. Gross income of the banks equals net income plus depreciation allowances on office buildings and equipment, plus outlay on goods and services from other sectors.

The simplifying assumption is made that banks render services only to enterprises and to the government. Therefore, the gross income of the banks as defined has been deducted from the aggregate income produced in all sectors of the economy.

Puerto Rico. Income originating in banking is the total payroll plus the net profit free of interest. Interest and dividends received less interest paid is regarded as imputed interest to depositors, and this total plus interest actually paid is attributed to individual, not business, depositors.

Switzerland. National income is evaluated as the total of all income payments to factors of production. In estimating interest received, double counting is avoided by taking into account only interest and net rents accruing to individuals, life insurance companies and other final income recipients.

United States. "Imputed interest consists of the value of financial services received by persons without explicit payment."

On the basis of this information, the conclusion may be drawn that the majority of countries seem to favor a treatment whereby the services rendered by banks are imputed to borrowers rather than to depositors. The latter approach is adhered to in the evaluations for the United States and Puerto Rico.

The purpose of this paper is to discuss the comparability of national income estimates from the conceptual point of view. No attention has therefore been given to differences with respect to classifications used. If comparability of subdivisions is also aimed at, further detailed investigations would be needed. It has been found, for example, that the concept of agricultural income may have a widely different meaning. It may include rents of lands or it may exclude them. Government subsidies to agriculture may be included, or they may be left apart. Government enterprises offer another example. The criteria used to determine which activities should be classified under government enterprises are by no means the same in all countries. The well-known problems of industrial classifications likewise reflect themselves in the subdivisions of national income by branches of industry. A discussion of these problems is beyond the scope of this paper.

4. PROPOSALS FOR ACHIEVING COMPARABILITY OF NATIONAL INCOME ESTIMATES

In accordance with the conclusions following from the discussion on the concept of national income in §2, national income at factor cost is adopted in this section as the standard definition. It is conceived of as the total of all income payments to factors of production with the following stipulations:

1. National income includes the following non-monetary items:
   - (a) Net rent of owner-occupied houses.
   - (b) Farmers' consumption of own produce, valued at prices paid to farmers, and similar items.
   - (c) Payments in kind to household personnel, sailors, etc.
2. Social insurance and pensions are treated as follows:
   - (a) Contributions to pension funds and social insurance funds are included. Pensions and social insurance benefits will then have to be considered as transferred incomes. The value of medical services provided freely by the government is not included.
   - (b) Where the system is on a non-contributory basis or no schemes exist, pensions to retired personnel are considered as payments for services rendered and are included.
   - (c) Pensions or allowances to veterans, war widows, victims of persecution are considered as transferred incomes.
3. Unemployment assistance is considered as transferred income, but payments to people employed on relief works are included.
4. Government services in the non-business sector are included. The net value is measured by the total of wages and salaries paid. Income of the armed forces in money and in kind is included. Items included in income in kind are food and clothing. Armed forces abroad are included.
5. Profits and losses of government-owned enterprises are included. A deficit on current account will be counted as a loss, and not be considered as compensated by a government subsidy.
10. Corporate income tax is included. However, profits of corporations operating abroad are included after taxes. These taxes are

added to the income of the country where the corporation is operating.

11. Interest on Government debt not invested in enterprises or in real estate, is excluded. No interest is imputed to public buildings, schools, roads, etc.
12. Deliveries under lend-lease and mutual aid, occupation costs and reparations out of current production are considered as part of the national expenditure of the countries in which they originate. They are not included in the national income of the receiving country.
13. Personal remittances received from abroad are excluded. They are included in the national income of the paying country.
14. Net interest and dividends received from abroad are included. In principle, undistributed profits of corporations operating abroad are also included. No attempt is made, however, to include part of the undistributed profits of foreign corporations in which residents have invested. Interest on non-productive government debts, accruing to foreign bondholders, is deducted.
15. If possible, inventory valuation adjustments should be made.
16. Farm inventory changes are likewise to be taken into account, and similar adjustments may have to be made for other branches of industry.
17. Business insurance premiums, taken net, *i.e.*, after deduction of that part of the premium representing a payment for services rendered by the insurance companies, are treated as allowances for depreciation and maintenance.
18. Net income originating in banks and other financial intermediaries is equal to wages and salaries paid, including other labor income, plus profits. The gross value of services rendered by banks equals this net income plus allowances for depreciation and maintenance of office buildings and equipment, plus the value of goods and services purchased from other industries. To the extent that the services rendered by banks are not compensated by the receipts from fees and commissions, the difference is imputed to borrowers. Part of interest received is considered as payment for those services.
19. No adjustments are suggested regarding the treatment of costs to individuals of buying and selling securities and other property, as very few publications contain information on this item.
20. Illegal, immoral and black market transactions are excluded Black market transactions might be evaluated at legal prices and then included where such a procedure seems appropriate.

Taking these proposed rules as a basis, an attempt has been made to adjust existing national income estimates accordingly. The following tables summarize results for about ten countries. The tables should be considered as tentative, as not all adjustments required could be made, owing to lack of statistical data. Attempts are being made to obtain more figures for these and other countries, so as to improve the results It is believed that for the countries mentioned here, the main adjustments required to arrive at comparable national income figures have been made.

Where in the following tables it is stated that an item, for example a receipt X, is to be included, it will be clear that a payment is considered as a negative receipt, and accordingly is to be deducted.

Australia

The national income figures as published would require the corrections shown in Table 5. Owing to lack of statistical information, no adjustment could be made for the treatment of social security transactions in the original estimates, *viz.*, inclusion of retirement pensions and employees' contridutions and exclusion of most employers' contributions. The net result of this corrections would probably amount to an addition of 5 million to 10 million for the last few years. Income in kind of the armed forces would have to adjusted for medical attention, an item included in the Australian figures, but excluded from the proposed standard definition. However, it is known that the amount is very small.

TABLE 5

Australia

(millions of £ (A))

	1938 -39	1939 -40	1940 -41	1941 -42	1942 -43	1943 -44	1944 -45	1945 -46	1946 -47
1. NATIONAL INCOME estimates as published	803	852	923	1,075	1,229	1,279	1,228	1,236	1,265
2. Corrections:									
a. *Subtract* Net income from abroad	-42	-41	-42	-40	-38	-40	-38	-36	-34
3. NATIONAL INCOME for international comparisons....	761	811	881	1,035	1,191	1,239	1,190	1,200	1,231

Belgium

The main adjustment required is a subtraction of the interest on the nonproductive national debt. The correction has been made for the year 1938 only.

NATIONAL INCOME as published	65,200 million francs
Subtract Interest on nonproductive national debt	-1,200 ,, ,,
NATIONAL INCOME for international comparisons	64,000 ,, ,,

Bulgaria

The adjustments are shown in Table 6. For the years 1945 and 1946 basic data needed have not yet been published.

TABLE 6

Bulgaria

(billions of leva)

	1939	1940	1941	1942	1943	1944
1. NATIONAL INCOME estimates as published	56.9	67.1	89.4	121.8	161.5	250.0
2. Corrections:						
a. *Subtract* Interest on nonproductive public debt	-0.1	-0.1	-0.1	-0.3	-0.6	-0.7
b. *Subtract* Income from black market transactions	-0.1	-2.6	-6.8	-12.3	-21.3	-31.2
3. NATIONAL INCOME for international comparison	56.7	64.4	82.5	109.2	139.6	218.1

China

The adjustments made are shown in Table 7.

TABLE 7

China

(millions of yuan)

	1931	1932	1933	1934	1935	1936
1. NATIONAL INCOME as published (total available means)	23,212	23,597	20,044	18,394	21,293	26,908
2. Corrections :						
a. *Subtract* Capital inflow from abroad	-68	-44	-26	-60	-105	-113
b. *Subtract* Net personal remittances received	-324	-294	-300	-250	-260	-320
3. NATIONAL INCOME for international comparisons	22,820	23,259	19,718	18,084	20,928	26,475

Czechoslovakia

The adjustments are made for the last prewar year only and for 1946, as figures for the war years refer to the Czech lands, excluding border districts incorporated by Germany and Slovakia, and therefore are not comparable to estimates for other years. The national income for 1946 includes a small margin for income from black market transactions, which could not be deducted.

	1937	1946
	(billions of kčs)	(billions of kčs)
1. NATIONAL INCOME as published	60.1	148.1
2. Corrections:		
a. *Subtract*		
Interest on nonproductive government debt	-0.9	
b. *Add* Employers' contributions to social insurance		3.2
c. *Add* Subsidies		4.2
	—	—
3. NATIONAL INCOME for international comparisons	59.2	155.5

Ireland

The adjusted figures for Ireland are shown in Table 8.

TABLE 8

Ireland

(£ million)

	1938	1939	1940	1941	1942	1943	1944
1. NATIONAL INCOME as published	154.4	164.1	179.1	195.1	216.0	241.3	252.0
2. Corrections:							
a. *Add* Employers' contributions to social insurance	1·2	1.2	1.2	1.2	1.2	1.2	1.1
b. *Subtract* Net personal remittances received	-3.0	-2.8	-2.1	-3.9	-8.4	-12.6	-13.5
3. NATIONAL INCOME for international comparisons	152.6	162.5	178.2	192.4	208.8	229.9	239.6

Netherlands

National income estimates for this country require the following adjustments:

	1938
	(millions of guilders)
1. NATIONAL INCOME as published	5,153
2. Corrections:	
a. *Add* Taxes on corporate profits	+33
b. *Subtract* Interest on nonproductive public debt	-70
c. *Subtract* Personal remittances from overseas	-5
d. *Subtract* Losses of the railroads	-24
3. NATIONAL INCOME for international comparisons	5,087

In the official estimates for 1946, interest on war loans is not included. The figure has not been corrected here as the estimate is an extremely crude one.

Netherlands Indies

Profits of Dutch and foreign corporations are included in the original estimates, and therefore have to be deducted.

	1938	1939
	(millions of guilders)	
1. NATIONAL INCOME as published	2,815	2,932
2. *Subtract*:		
Profits of foreign corporations	-100	-210
3. NATIONAL INCOME for international comparisons	2,715	2.722

New Zealand

Published figures show aggregate private income. The following adjustments are accordingly required:

Add: a. Profits of government-owned enterprises.
b. Imputed rent of owner-occupied houses.
c. Payments and allowances to members of the armed forces overseas, including income in kind.
d. Allowance for undisclosed income.

Subtract:
e. Social security benefits.
f. Interest payments on national debt to residents.

Detailed estimates on these adjustments are not available but the final result is known.

	1944–45
	(millions of N Z £)
Aggregate private income	303.5
NATIONAL INCOME for international comparisons	330.1

Palestine

The main adjustment required is the elimination of income from black market transactions, included in the estimates for 1944. These transactions have been revalued at legal prices.

	1939	1942	1943	1944
		(millions of P £)		
1. NATIONAL INCOME as published	30.24	75.89	90.00	123.04
2. *Subtract* Adjustment for income in agriculture from sales at black market prices				–1.54
3. NATIONAL INCOME for international comparisons	30.24	75.89	90.00	121.50

United Kingdom

The adjustment made is shown in Table 9.

TABLE 9

United Kingdom

(£ million)

	1938	1939	1940	1941	1942	1943	1944	1945	1946
1. NATIONAL INCOME as published	4,671	5,037	5,980	6,941	7,664	8,171	8,366	8,340	7,974
2. *Add* Employers' contributions to social insurance	54	55	58	65	72	72	71	69	87
3. NATIONAL INCOME for international comparisons	4,725	5,092	6,038	7,006	7,736	8,243	8,437	8,409	8,061

5. CONCLUDING REMARKS

The present paper shows in broad lines the actual status of national income research, what experience is available, and what the next steps should be in the interest of a greater international comparability of the estimates. A conclusion that follows from the survey is this, that the various national estimates show a considerable divergence both with respect to the inclusion or exclusion of a number of items which may enter into the national income, and with respect to the methodology of the evaluations and the presentation of the results. Whereas a number of these differences are unavoidably tied up with the particular needs of the countries concerned, the structure of their economies and the nature of available statistical information, it is believed that an important step forward would be made if all publications on national income could contain detailed information on the methods of computation following the general scheme given in the preceding sections of this report. On the basis of such information it would be easier to see which conceptual and methodological differences are prevailing. If, furthermore, for each of the items concerned, separate statistics could be published, it would be easier to make adjustments required to arrive at a greater international comparability of national income estimates.

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Résumé

Le document contient une revue de la terminologie relative au revenu national et totaux connexes adoptée dans cette étude, un examen détaillé de la définition du revenu national, une analyse des donées existantes relatives au revenu national de trente pays et propose l'adoption d'une définition type du revenu national.

On définit généralement le revenu national comme la somme des plus values de toutes les marchandises et de tous les services produits par l'économie pendant une certaine période, un an généralement, y compris les revenus encaissés à l'étranger et déduction faite des revenus payés à l'étranger. C'est ce qu'on appelle souvent le revenu national calculé au cout des facteurs.

Pour la discussion complète de la notion de revenu national et des problèmes liés à l'évaluation de celui-ci, on renvoie à un mémorandum intitule "Définition et mesure du revenu national et des totaux connexes" présenté par M. Richard Stone, Président du Sous-Comité des statistiques du revenu national dépendant du Comité des experts statisticiens de la Société des Nations. On propose ensuite une liste minimum de 22 rubriques à examiner dans toute enquête portant sur le revenu national.

Une étude des définitions du revenu national ayant cours dans une trentaine de pays montre des conceptions très variées et de nombreuses différences dans le traitement des diverses rubriques qui entrent dans la définition du revenu national. En se fondant sur une définition type, on a essayé d'ajuster les estimations du revenu national portant sur une douzaine de pays. Les résultatsde ces recherches sont présentés dans une série de tableaux.

On pense qu'on pourrait réaliser un progres important en introduisant dans toutes les publications relatives au revenu national des indications détaillées sur les méthodes de calcul conformément aux schémas donnés dans cette étude. Si on pouvait, de plus, publier des statistiques distinctes pour chacune des rubriques intéressées, il serait plus facil d'arriver à une plus grande comparabilité sur le plan international des statistiques relatives aux revenus nationaux.

La bibliographie contient les sources les plus importantes des données relatives au revenu national pour chacun des pays visés par cette étude.

Discussion

Mr. G. COLM (United States) agreed with the speaker on the value of an analysis of various concepts going into estimates of national income and the need for uniform concepts and methods. However, he objected to the establishment of any one concept as the concept, believing that the concept to be used depended on the purpose for which the estimate was made. In his opinion, the inclusion or exclusion of certain items, such as the services of housewives, might properly depend on whether the margin of accuracy was increased or decreased. He preferred the definition of national income at market prices rather than at factor cost as being more appropriate for purposes of arriving at real national income. He agreed with the speaker that incidence of indirect taxes was in general with the consumer, and that this leads to national income at factor cost as the appropriate concept, but that for specific products the incidence might be different and on that ground imply a different treatment. He urged attention to a significant classification of accounts rather than the derivation of one aggregate figure.

Mr. R. N. STONE (United Kingdom) stated that if national income was regarded as the sum of incomes, the definition of national income at factor cost would seem to be fundamental. However, rather than arguing about one concept, he would consider it more important to arrive at a classification of transactions in the form of national accounts. Once such a structure was set up, any useful income aggregate could be obtained simply by following certain rules. In his opinion it was unfortunate that national accounts were ordinarily an aggregation of constituent private accounts, which were not designed to serve purposes of economic analysis. He hoped that in the future more appropriately constructed national accounts could be obtained.

Mr. TINBERGEN (Netherlands) took exception to the exclusion of black market transactions, maintaining that the border line between such activities and legal transactions was extremely thin and vague. He expressed the hope that the work being undertaken in the Statistical Office would continue to be fruitful and that attention would be given to the possibility of forecasting incomes.

Mr. SHIRRAS (United Kingdom) emphasized that it was impossible to be limited to one particular definition—in his opinion there should be at least five. He sensed the feeling among British economists to be that the aggregate to be used had to be related to the question that wanted answering.

Mr. C. CLARK (Australia) hoped that an international agreement on national income statistics could be reached even if the concept adopted was not the best possible one. He proposed national income per man-hour of work as a useful concept towards obtaining comparability, inasmuch as non-economic services even if important must be ignored.

Mr. A. SMITHIES (United states) stated that, as a consumer rather than producer of statistics, he believed in the general usefulness of a single figure as opposed to the use of a number of different concepts, if only to minimize confusion in the public's mind. He himself preferred national income at factor cost. He thought greater attention should be paid to the question of overhead costs of running a highly industrialized economy—citing the case of the subway system of New York City—in order that useful international comparisons could be made.

Mr. B. BARBERI (Italy) emphasized that the important thing was to arrive at the real national income of every country, hence the choice of prices should be resolved with reference to this end.

Mr. J. E. DUMONTIER (France) expressed agreement with Mr. Colm and Mr. Stone, and said he would like to see natinal income aggregates made subordinate to a system of social accounts, the use of which would in his opinion add another dimension to the field of national income statistics. He believed there was merit in Mr. Clark's suggestion for the use of national income per man-hour of work, inasmuch as leisure was a satisfaction. He also favored inclusion of income from black market transactions.

Mr. E. VAN DER AA (Belgium) deplored the fact that only about 25 countries published national income data, so badly needed for international purposes. He believed the usefulness of social accounts had been much underestimated, and proposed that the Economic and Social Council should recommend the setting up of national committees for national income research and the development of national accounts.

Mr. J. ZAGORSKI (Poland) stressed that national income concepts should be unified and at the same time brought into conformity with modern economic thought. It was his opinion that monopoly profits should be treated not as factor costs but as transferred incomes. He asserted that when indirect taxes increase, monopoly profits decrease.

Mr. V. K. R. V. RAO (India) believed that more necessary than a uniform definition of national income was the need for national income computers to give the most complete possible information regarding the items included and the methods followed in the computation of each item. He underlined the dangers that exist in undertaking a comparison of national income estimates, and urged a great deal of research to be done, particularly in the field of international price comparisons, before seeking a formula for reducing national income estimates to a common basis of comparability.

Mr. DERKSEN in reply said that it was not his intention to suggest national income at factor cost as the only concept. He expected to arrange national income figures in such a way that they could be recombined into various useful totals. He agreed that the use of social accounts was the most promising avenue for further development at the present time. As to the dispute between national income at factor cost and at market prices, he believed that the appropriateness of the latter concept except for deflation of prices was highly questionable. Cost of living indices were in his opinion valid for deflating consumer expenditures, but not the total national income. He granted that there were many problems to be studied and solved, and indicated that the Statistical Office of the United Nations was striving to further such research.